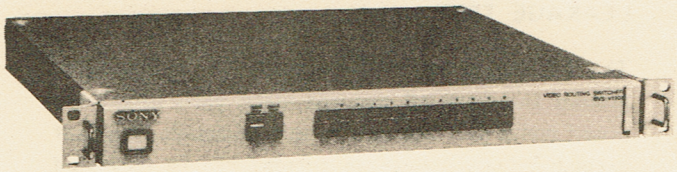
SONY

VIDEO ROUTING SWITCHER (12×1)

BVS-V1201



MAINTENANCE MANUAL
1st Edition (Revised 7)
Serial No. 10001 and Higher

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)

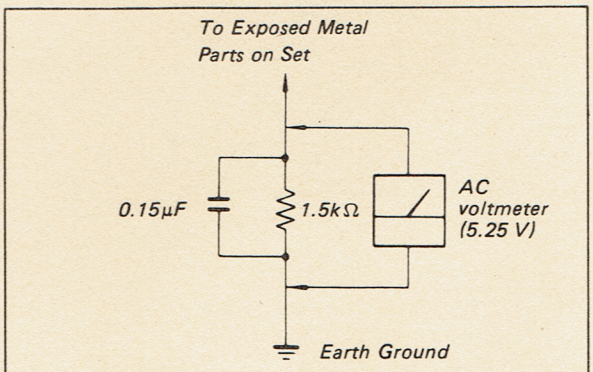


Fig. A. Using an AC voltmeter to check AC leakage.

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理など行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

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第1章
設　置

1−1.　使用環境

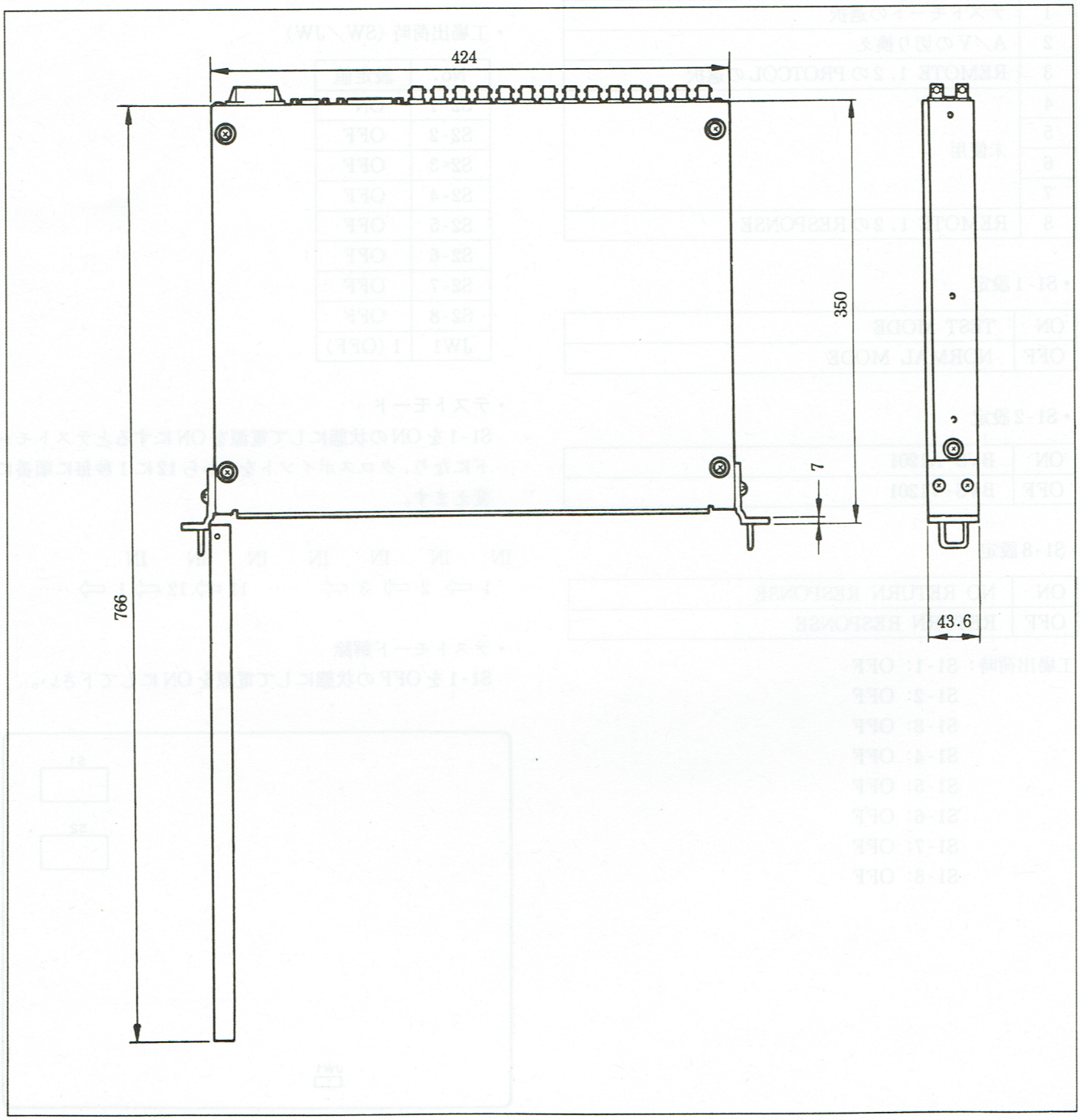
・セット内の温度上昇を防止するために，設置する場所の空気の循環には充分注意して下さい。
・セットの動作環境温度は0°C〜40°Cですのでセットを熱源の側に設置しないで下さい。

1−2.　設置スペース

・セットの外形寸法は図の通りです。

1−3.　電源

・BVS-V1201の電源は，スイッチング電源（±5 V）を使用しています。入力はAC 100〜240 V±10%切り換えなしで対応します。



1−4. システムセレクトスイッチのセッティング

・セレクトスイッチの機能は下記の通りですので，各々のシステムにあわせて，また状況に応じて，設定して下さい。

1−4−1. IF-278基板

・S1

No.	機　能
1	テストモードの選択
2	A／Vの切り換え
3	REMOTE 1，2のPROTCOLの選択
4	未使用
5	
6	
7	
8	REMOTE 1，2のRESPONSE

・S1-1設定

ON	TEST MODE
OFF	NORMAL MODE

・S1-2設定

ON	BVS-A1201
OFF	BVS-V1201

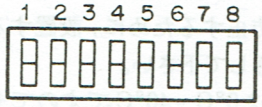
・S1-8設定

ON	NO RETURN RESPONSE
OFF	RETURN RESPONSE

工場出荷時: S1-1: OFF
S1-2: OFF
S1-3: OFF
S1-4: OFF
S1-5: OFF
S1-6: OFF
S1-7: OFF
S1-8: OFF

・S2; ユニットアドレスの選択

REMOTE 1，2において，制御する場合の本機のアドレス（UA2）を設定します。



どれか1つのみONにすることができます。

・JW1

RS-422の通信回路の終端（100Ω）ON／OFF設定

・工場出荷時（SW／JW）

No.	設定値
S2-1	ON
S2-2	OFF
S2-3	OFF
S2-4	OFF
S2-5	OFF
S2-6	OFF
S2-7	OFF
S2-8	OFF
JW1	1（OFF）

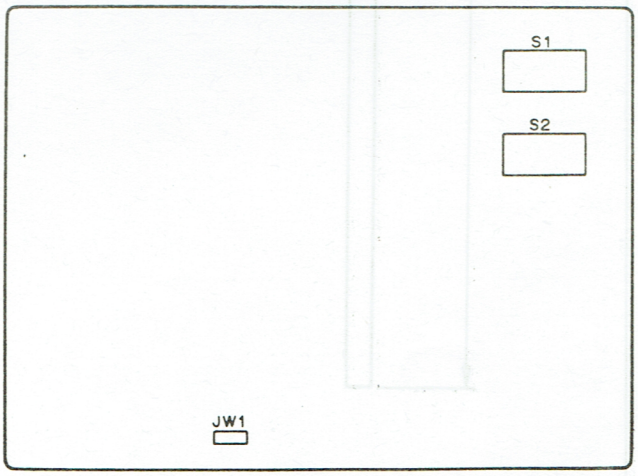
・テストモード

S1-1をONの状態にして電源をONにするとテストモードになり，クロスポイントを1から12に1秒毎に順番に変えます。

IN 1 ⇨ IN 2 ⇨ IN 3 ⇨ ····· IN 11 ⇨ IN 12 ⇨ IN 1 ⇨ ·····

・テストモード解除

S1-1をOFFの状態にして電源をONにして下さい。



IF-278基板（部品面）

1－4－2. VSW-22基板

• JW1: SW TIMING

スイッチの切り替えタイミングを設定します。

No.	名　称	機　　能
1	VI	JW4で設定されるビデオ信号のバーチカルインターバルで切り替わります。この設定の場合で入力がなくなった場合には，2のDIRECTの同じ動作になります。
2	DIRECT	入•出力のビデオ信号に関係なくボタンを押したタイミング又は，制御信号がきたタイミングで切り替わります。
3	CPU	IF-278基板内のCPUで設定されたタイミングで切り替わります。
4	EXT	REMOTE•3コネクター内の，VI STROBE BUSの立ち上がりタイミングで切り替わります。この場合は，共通BUSラインにタイミング情報が送られていることが条件となります。(JW5: 参照)

• JW2: CONTROL

スイッチの切り替え制御方式を設定します。

No.	名　称	機　　能
1	PANEL	前面パネルのボタン，別売りのリモートコントロールパネルBKS-R1210のボタン，及びREMOTE•1，2コネクターからのシリアル信号による制御の場合に設定します。
2	EXT	BVE-900／BVE-9000等，REMOTE•3コネクターのBINARY DATA BUSを直接制御する方式の場合に設定します。

• JW3: CLAMP

入力信号に対するクランプ方式を設定します。

No.	名　称	機　　能
1	SELF	各入力回路自身でクランプする方式です。色差信号以外の全てのビデオ信号に対して有効です。この場合，入力信号同志は，非同期でもかまいません。
2	PULSE	R-Y，B-Yの色差信号等バイポーラ信号を入力する場合のクランプパルスによるクランプです。全てのビデオ信号に対して有効ですが，クランプパルスを発生するための入力（又は，同等のOUTPUT VIDEO）が必要です。

• JW4: VP SOURCE

スイッチタイミング，及びクランプパルスのREF信号のソースを設定します。

No.	名　称	機　　能
1	REF	リアパネルにREF VIDEO端子を入力として設定します。この場合に4 Vp-p，又は2 Vp-pのSYNC信号でもREF VIDEOとして供給することが可能です。
2	OUTPUT	本機のOUTPUT端子の出力信号をREF VIDEOとして設定します。

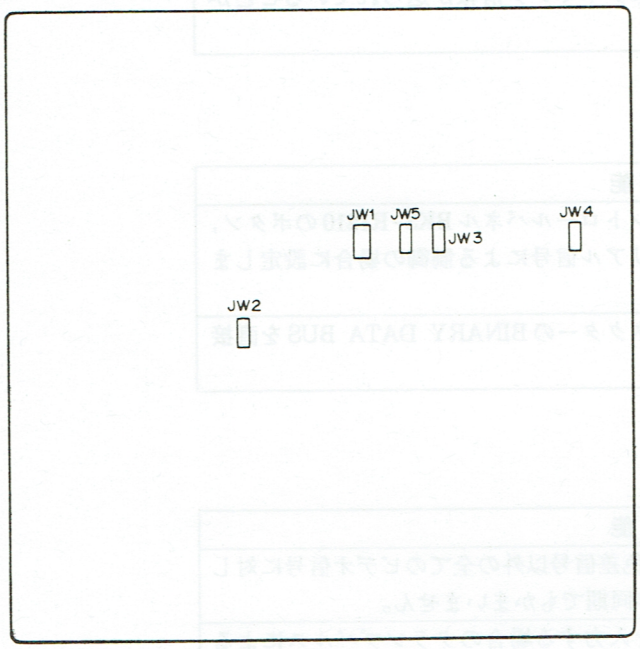
• JW5: VI SEND

VIパルスをREMOTE•3のVI STROBE BUSラインに送り出すか否かを設定します。

No.	名　称	機　　能
1	OFF	VIパルスを送り出しません。
2	ON	VIパルスを送り出します。VIパルスは1つのユニットからのみ送り出す様にします。

• JW の設定（工場出荷時）

JW No.	設定値
JW 1	1
JW 2	1
JW 3	1
JW 4	1
JW 5	1



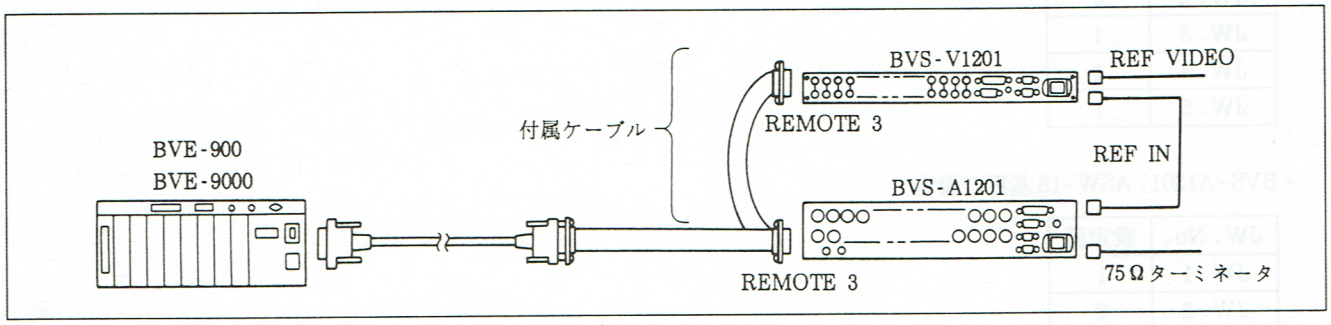
VSW-22 基板（部品面）

1－5. 接続

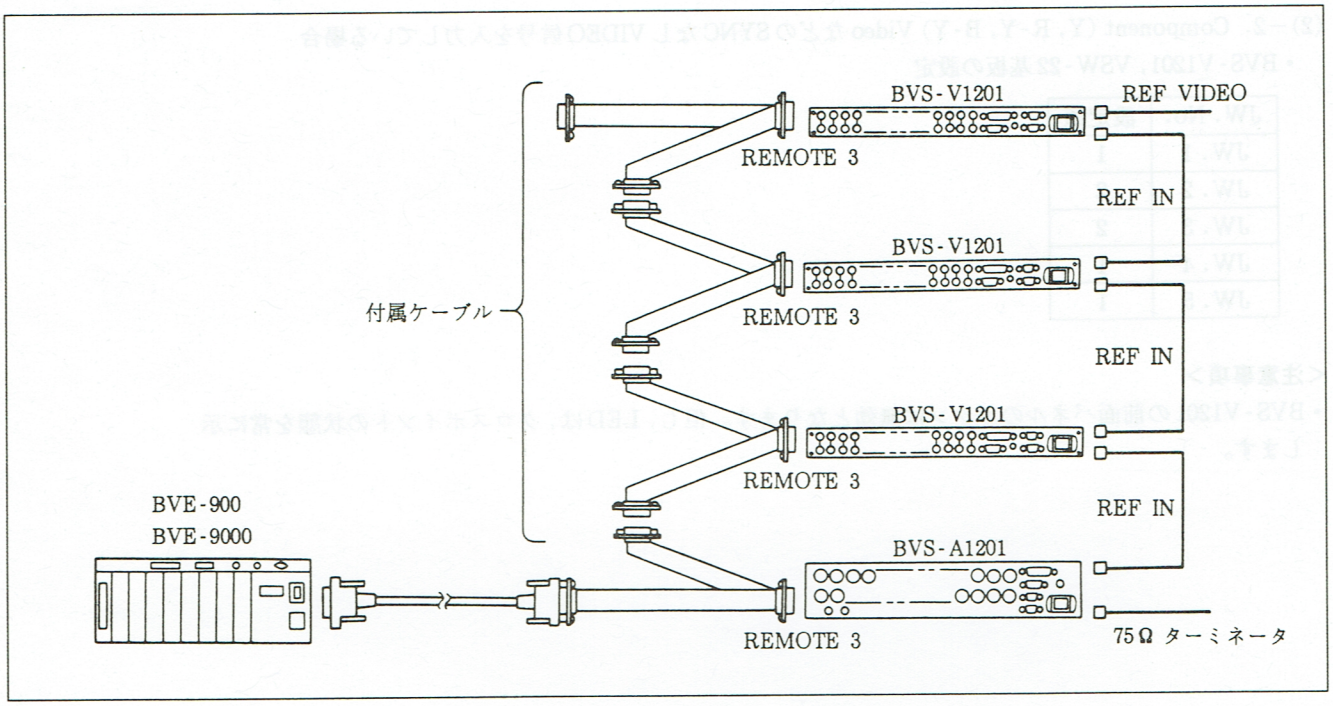
1－5－1. BVE-900, BVE-9000 のモニタースイッチャーとして接続する場合

(1) 接続方法

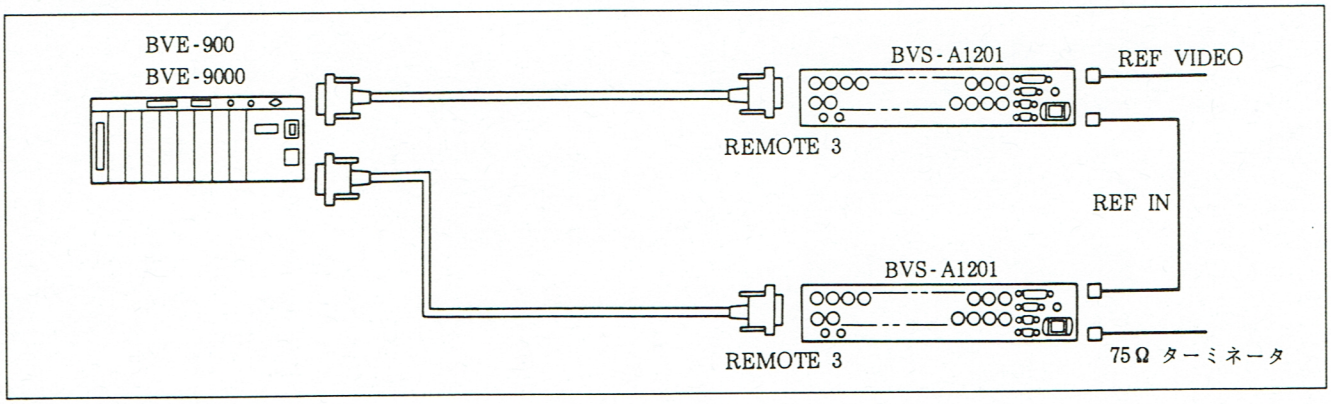
• Composite Video のとき



• Component Video のとき



• 4 Channel Audio のとき



(2) 接続後の設定

(2)－1. BVE-900, BVE-9000からのコントロールの場合は，下記の様に設定します。

• BVS-V1201, VSW-22基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	2
JW. 3	1
JW. 4	1
JW. 5	1

• BVS-A1201, ASW-18基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	2
JW. 3	1

(2)－2. Component (Y, R-Y, B-Y) VideoなどのSYNCなしVIDEO信号を入力している場合

• BVS-V1201, VSW-22基板の設定

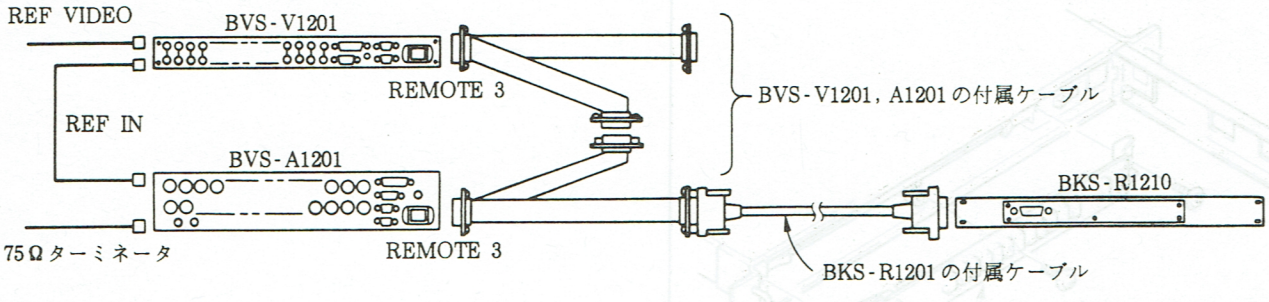
JW. No.	設定値
JW. 1	1
JW. 2	2
JW. 3	2
JW. 4	1
JW. 5	1

＜注意事項＞

• BVS-V1201の前面パネルのボタンは無効となります。但し，LEDは，クロスポイントの状態を常に示します。

1－5－2. BVS-V1201とBVS-A1201を単独で使用する場合

(1) 接続方法



BKS-R1210を使ってコントロールできます。

(2) 接続後の設定

・BVS-V1201，VSW-22基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	1
JW. 3	1
JW. 4	1
JW. 5	1

・BVS-A1201，ASW-18基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	1
JW. 3	1

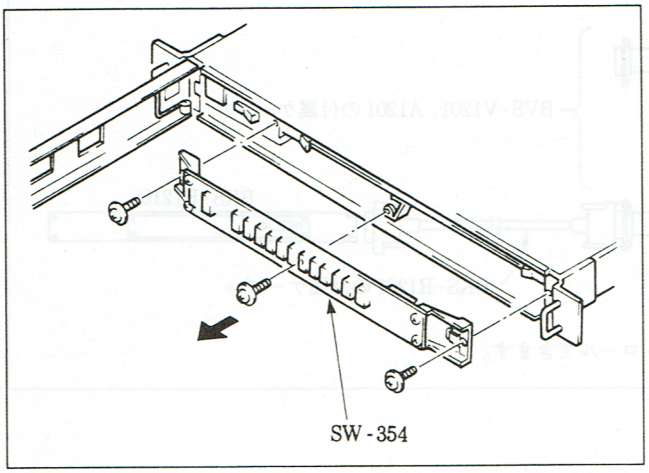
＜注意事項＞

・BVS-V1201の前面パネルのボタンとBKS-R1210のボタンで，それぞれ異なるクロスポイントを同時に押した場合には，先に押した方のボタンが優先し，指を離すまで有効となります。

・BVS-V1201の前面パネル，及びBKS-R1210では，AUDIO (BVS-A1201) の各チャンネルを別々に選択することは出来ません。

1−6. SW-354 基板の取り外し

• フロントパネルを開け，ネジ 3 本（＋PSW 3×6）を外し SW-354 基板を手前に引き出します。

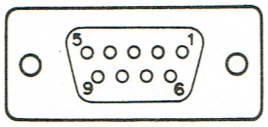


1−7. コネクターの入出力信号

コネクターパネルのコネクターの入出力信号は下記の通りです。

1−7−1. BVS-V1201

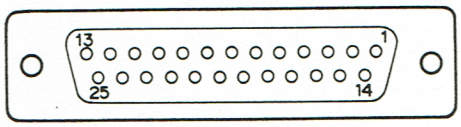
REMOTE 1,2 (D-SUB 9 ピン PIN FEMALE)



− EXT VIEW −

PIN No.	信号名	機能（RS422A 規格）
1	FG	FRAME GROUND
2	TA	TRANSMIT A (−)
3	RB	RECEIVE B (+)
4	RC	RECEIVE SIGNAL COMMON
5	SP	
6	TC	TRANSMIT SIGNAL COMMON
7	TB	TRANSMIT B (+)
8	RA	RECEIVE A (−)
9	FG	FRAME GROUND

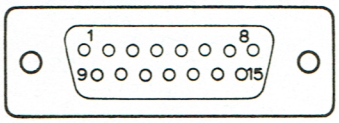
REMOTE 3. (D-SUB 25 ピン FEMALE)



– EXT VIEW –

PIN No.	信号名	機 能
1	A2-A	AUDIO 2 SELECT BINARY DATA: BUS
2	A2 ONLY	ONLY AUDIO 2 SELECT BUS
3	+5 V-A	AUDIO +5 V OUTPUT
4	VI-STB	VERTICAL INTERVAL STROBE: BUS
5	A1-A	AUDIO 1 SELECT BINARY DATA: BUS
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	CHANNEL SELECT: BUS
10	A1 ONLY	ONLY AUDIO 1 SELECT BUS
11	V ONLY	ONLY VIDEO SELECT BUS
12	KEY ON	KEY ON: INPUT
13	V-A	VIDEO SELECT BINARY DATA: BUS
14	A2-B	AUDIO 2 SELECT BINARY DATA: BUS
15	A2-C	
16	A2-D	
17	+5 V-V	VIDEO +5 V OUTPUT
18	GND	GND
19	CH-1	CHANNEL SELECT: BUS
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	VIDEO SELECT BINARY DATA: BUS
24	V-C	
25	V-B	

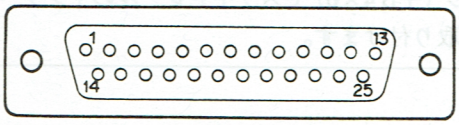
TALLY (D-SUB 15 ピン MALE)



– EXT VIEW –

PIN No.	信号名	機 能
1	TALLY 1	MAKE A POINT OF CONTACT TO TALLY COMMON
2	TALLY 2	
3	TALLY 3	
4	TALLY 4	
5	TALLY 5	
6	TALLY 6	
7	TALLY 7	
8	TALLY 8	
9	TALLY 9	
10	TALLY 10	
11	TALLY 11	
12	TALLY 12	
13	TALLY COM	
14	SPARE	GND
15	GND	

SW-354基板 (D-SUB 25ピンMALE)



– EXT VIEW –

PIN No.	信号名	機　能
1		
2	A2 ONLY	GREEN BUTTON : OUTPUT
3	+5 V IN	+5 V FOR GREEN TALLY
4		
5	A1-A	GREEN TALLY BINARY DATA: INPUT
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	BUTTON BINARY DATA: OUTPUT
10	A1 ONLY	GREEN BUTTON : OUTPUT
11	V ONLY	RED BUTTON : OUTPUT
12	KEY ON	KEY ON SIGNAL: OUTPUT
13	V-A	RED TALLY BINARY DATA: INPUT
14		
15		
16		
17	+5 V IN	+5 V FOR RED TALLY
18	GND	
19	CH-1	BUTTON BINARY DATA: OUTPUT
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	RED TALLY BINARY DATA: INPUT
24	V-C	
25	V-B	

1－8. 接続コネクター

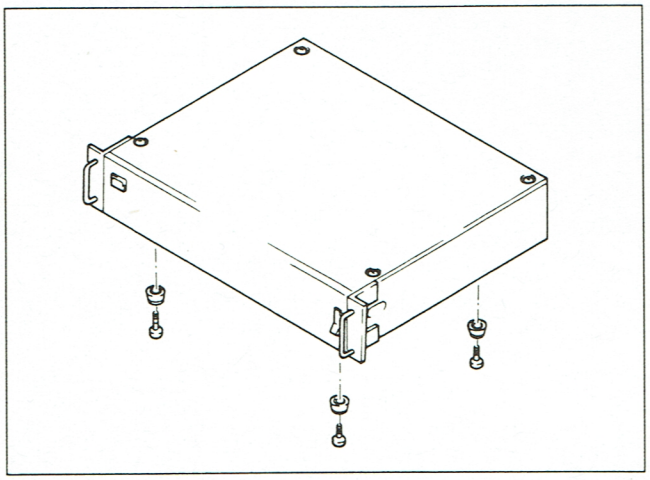
コネクターパネル部の コネクターの機能名称	接続するケーブル側の コネクターの部品番号と名称
REMOTE 1,2	RCC-5G
	RCC-10G (リモコンケーブル9P) 1-555-873-23
	RCC-30G
REMOTE 3	インターフェースケーブル (BKS-R1210付属) 接続コード 1-574-883-11
TALLY	1-558-592-11

1－9. ラックマウントの方法

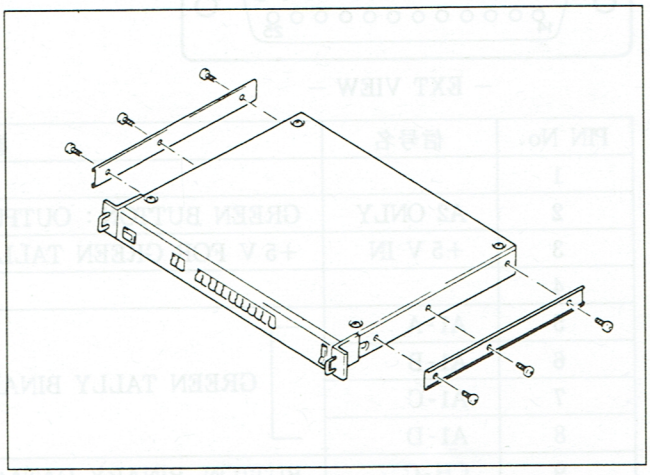
・19インチ標準ラックに組み込む場合

＜推奨品＞
スライドレール: ACCURIDE社製, RACKMOUNT
SUDES MODEL C-305-22
SLIDE LENGTH 22 INCH 2本
ブラケット : ACCURIDE 社製 #5516-2 4個
＜用意するもの＞
インナーメンバー取り付け用ネジ (+B 4×6) 6本
板ナット (3穴) 8枚 (ソニー部品番号3-651-784-01)
ブラケット固定用ネジ① (+B 4×8) 8本
ブラケット固定用ネジ② 六角穴付ボルト M 4×16 8本
ラックマウント用ネジ (+RK 5×16) 4本
ラックマウント用飾りワッシャー 4個
(ソニー部品番号2-297-913-01)
L レンチ (対辺3 mm) 1個

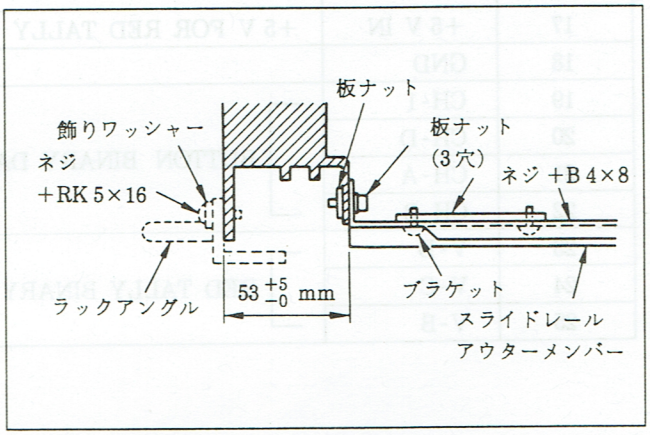
1. セット底面の脚4個を取り外します。



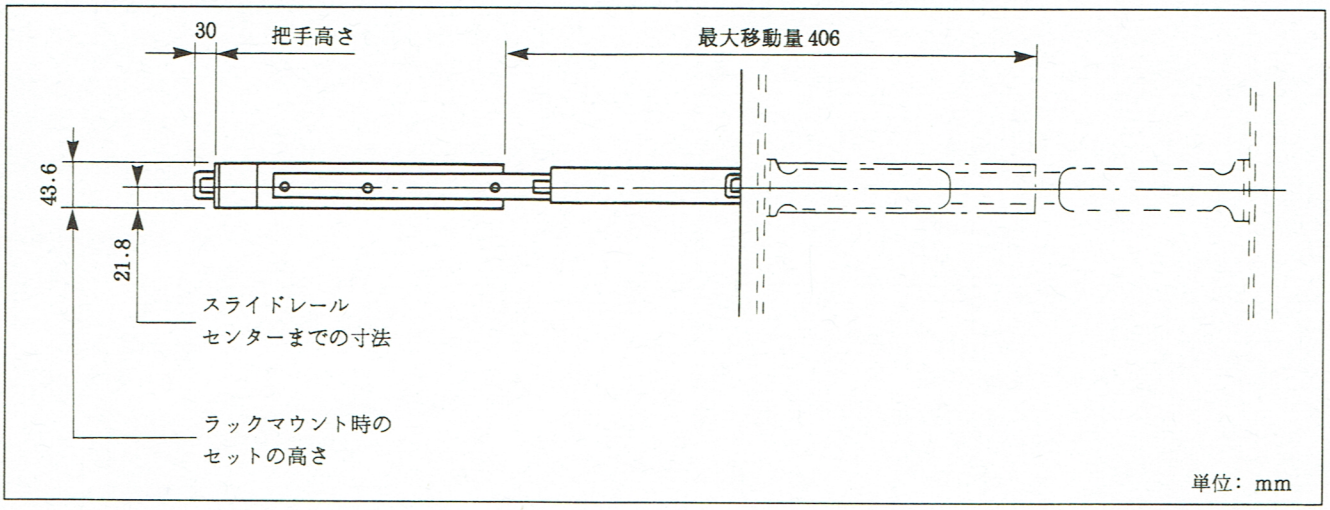
2. 用意したネジ (+B 4×6) でスライドレールのインナーメンバーを取り付けます。



3. スライドレールのアウターメンバーとブラケットを4枚の板ナット (3穴) を使用し8本のネジ (+B 4×8) で仮り止めします。
4. スライドレールのアウターメンバーのブラケットをラックに取り付けスライドレールの先端からラック外側までの寸法が規格に合うように調整します。



BVS-V1201をラックマウントした時の最大移動距離は下記の通りです。



1－10. 付属品アクセサリー

- 電源コード (3)
- オペレーションマニュアル (1)
- メンテナンスマニュアル (1)
- Dサブ25Pハーネス (1)
- 延長基板 (1)
- ラベル (1)
- プラグホルダ (2)

SECTION 1
INSTALLATION

1-1. OPERATING ENVIRONMENT

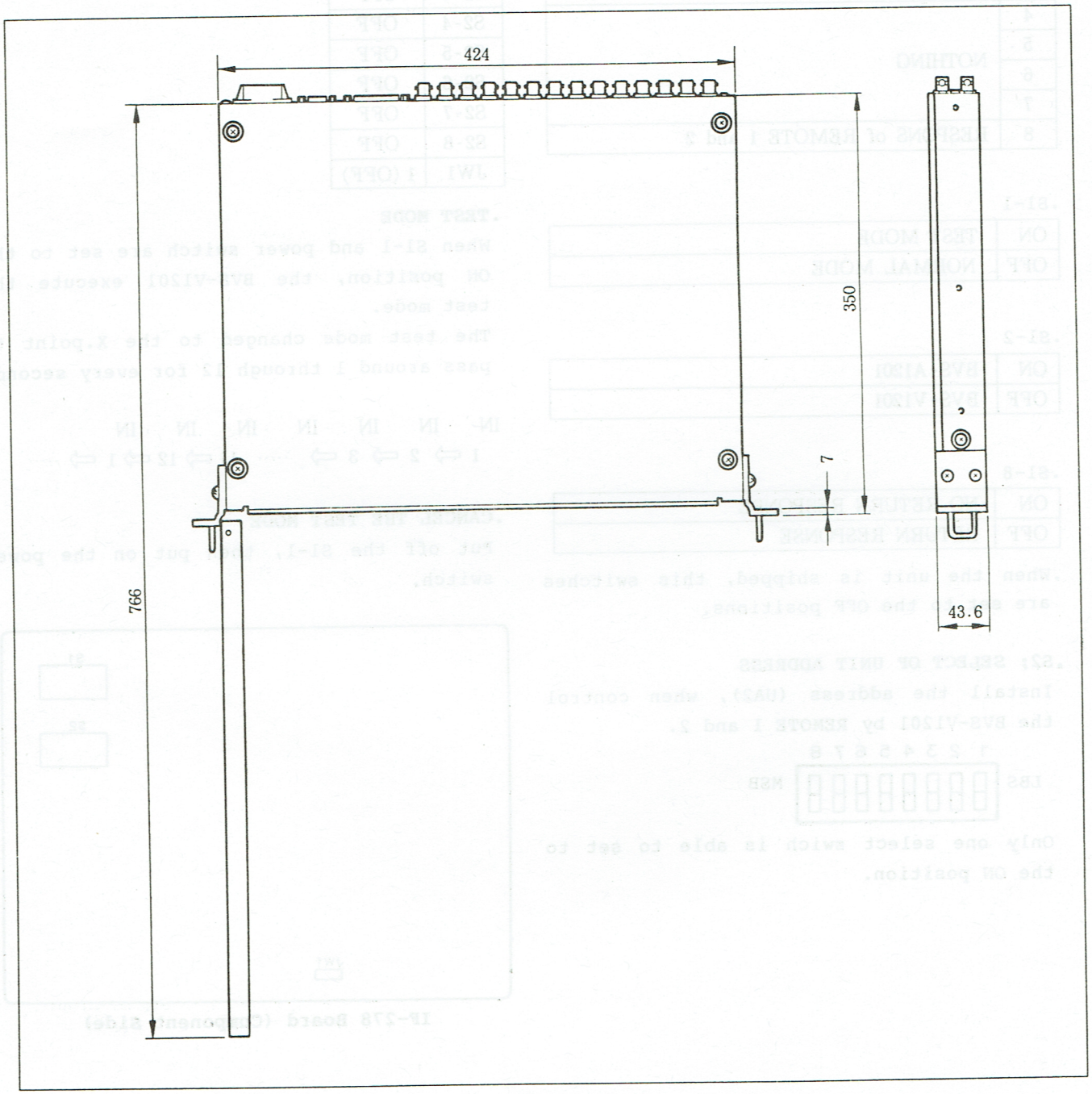
.Be very careful of the air circulation at the installation site to prevernt an increase in temperature within the unit.
.As the operating temperature of the unit is 0°C to 40°C, do not install the unit close to a source of heat.

1-2. INSTALLATION SPACE

.The external dimensions of the unit are as shown in the figure.

1-3. POWER SOURCE

.A switching regulator (±5V) is used for the power source of the BVS-V1201; therefore, the unit can be used with a voltage of 100V to 240V ±10% without changing the supply voltage.



1-4. SYSTEM SELECT SWITCH SETTINGS

.The functions of the select switches are the following. Setting them according to your system and your requirements.

1-4-1. IF-278 Board

.S1

No.	Function
1	TEST MODE SELECT
2	CHANGEING (A/V)
3	PROTCOL SELECT of REMOTE 1 and 2
4	NOTHING
5	
6	
7	
8	RESPONS of REMOTE 1 and 2

.S1-1

ON	TEST MODE
OFF	NORMAL MODE

.S1-2

ON	BVS-A1201
OFF	BVS-V1201

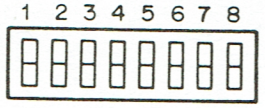
.S1-8

ON	NO RETURN RESPONSE
OFF	RETURN RESPONSE

.When the unit is shipped, this switches are set to the OFF positions.

.S2; SELECT OF UNIT ADDRESS

Install the address (UA2), when control the BVS-V1201 by REMOTE 1 and 2.



Only one select swich is able to set to the ON position.

.JW1

This is the terminal resistor switch of the communication circuit (RS-422) select to the ON or OFF by 100 ohm.

.When the unit is shipped, this switches are set to the positions as follows. (SW/JW)

No.	Position
S2-1	ON
S2-2	OFF
S2-3	OFF
S2-4	OFF
S2-5	OFF
S2-6	OFF
S2-7	OFF
S2-8	OFF
JW1	1 (OFF)

.TEST MODE

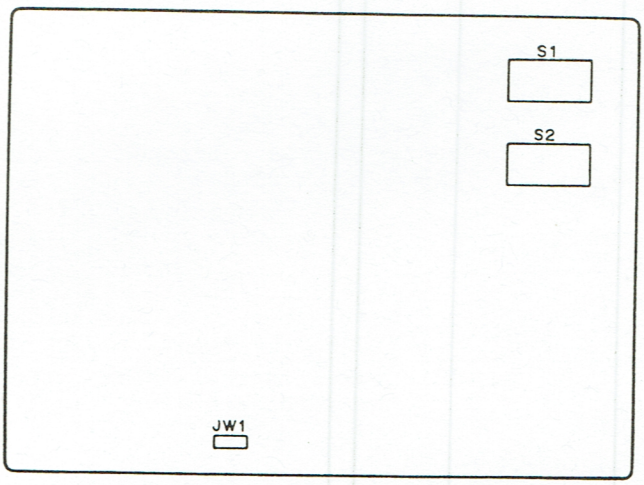
When S1-1 and power switch are set to the ON position, the BVS-V1201 execute the test mode.

The test mode changed to the X.point to pass around 1 through 12 for every second.

IN 1 ⇨ IN 2 ⇨ IN 3 ⇨ ····· IN 11 ⇨ IN 12 ⇨ IN 1 ⇨ ·····

.CANCEL THE TEST MODE

Put off the S1-1, then put on the power switch.



IF-278 Board (Component Side)

1-4-2. VSW-22 Board

.JW1: Switch Timing

Setting select switch timing.

No.	Name	Description
1	VI	Changes state using the VI (vertical interval) pulse of the video signal set by JW4. Operations are the same as No. 2 below (DIRECT) when there is no input.
2	DIRECT	Changes state when a button is pushed or when a control signal is received, regardless of whether any video signals are being input or output.
3	CPU	Changes state according to the timing specified by the CPU on the IF-278 board.
4	EXT	Changes state at the leading edge in the VI strobe bus line of the connector REMOTE-3. In this case, timing information must be sent to the common bus line. (Refer to JW5.)

.JW2: Control

Setting control switch selection.

No.	Name	Description
1	PANEL	Specifies control using the button on the front panel, the button on the BKS-R1210 (optional) remote control panel, or a serial signal from the connectors REMOTE-1 or REMOTE-2.
2	EXT	Specifies direct control of the binary data bus line of the connector REMOTE-3 (for the BVE-900 or BVE-9000).

.JW3: Clamp

Setting input signal clamping.

No.	Name	Description
1	SELF	Used to clamp signals in all input circuits. All signals other than the color-difference signals are clamped. With this setting, it does not matter if the input signals are asychronized.
2	PULSE	Bipolar input signals such as the color difference-signals R-Y, B-Y, etc. are clamped using a clamp pulse. Though all video signals are clamped, the proper input (or equivalent video output) to generate the clamp pulse is necessary.

.JW4: VP Source

Setting the source of the reference signal for the clamp pulse or switch timing.

No.	Name	Description
1	REF	Specifies the REF VIDEO terminal on the rear panel for input. It is possible to supply a 2Vp-p (peak-to-peak) or a 4Vp-p sync signal as the reference video signal.
2	OUTPUT	Specifies the signal output from the output terminal to be the reference video signal.

.JW5: VI Send

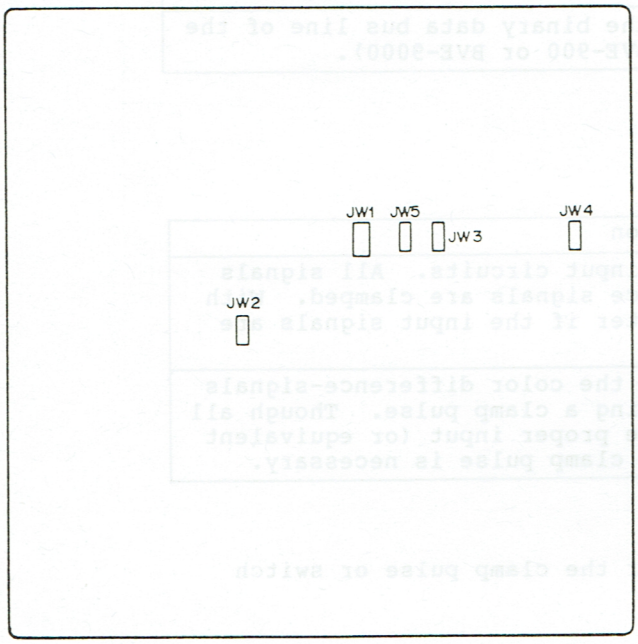
Setting whether the VI pulse is to be sent to the VI strobe bus line of REMOTE-3.

No.	Name	Description
1	OFF	No VI pulse is sent out.
2	ON	A VI pulse is sent out, but can only be sent out from one unit.

.Setting position of the JW.

(Set before ship)

JW No.	Position
JW 1	1
JW 2	1
JW 3	1
JW 4	1
JW 5	1



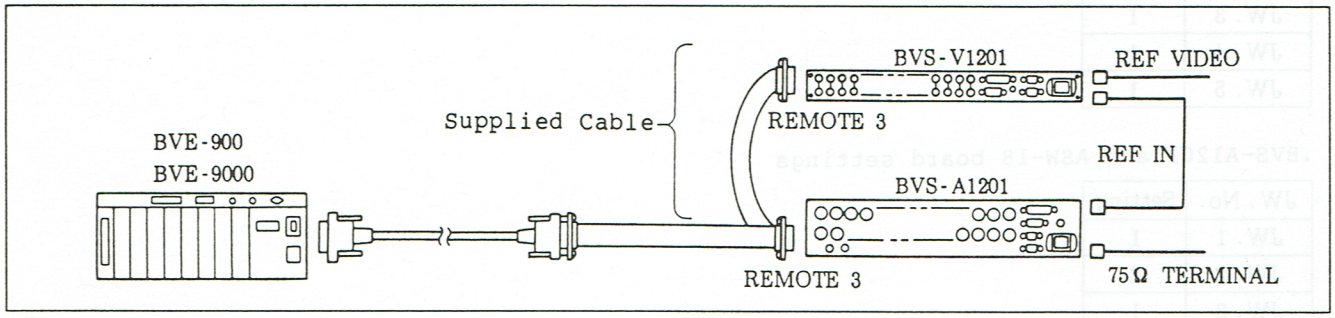
VSW-22 Board (Component Side)

1-5. CONNECTIONS

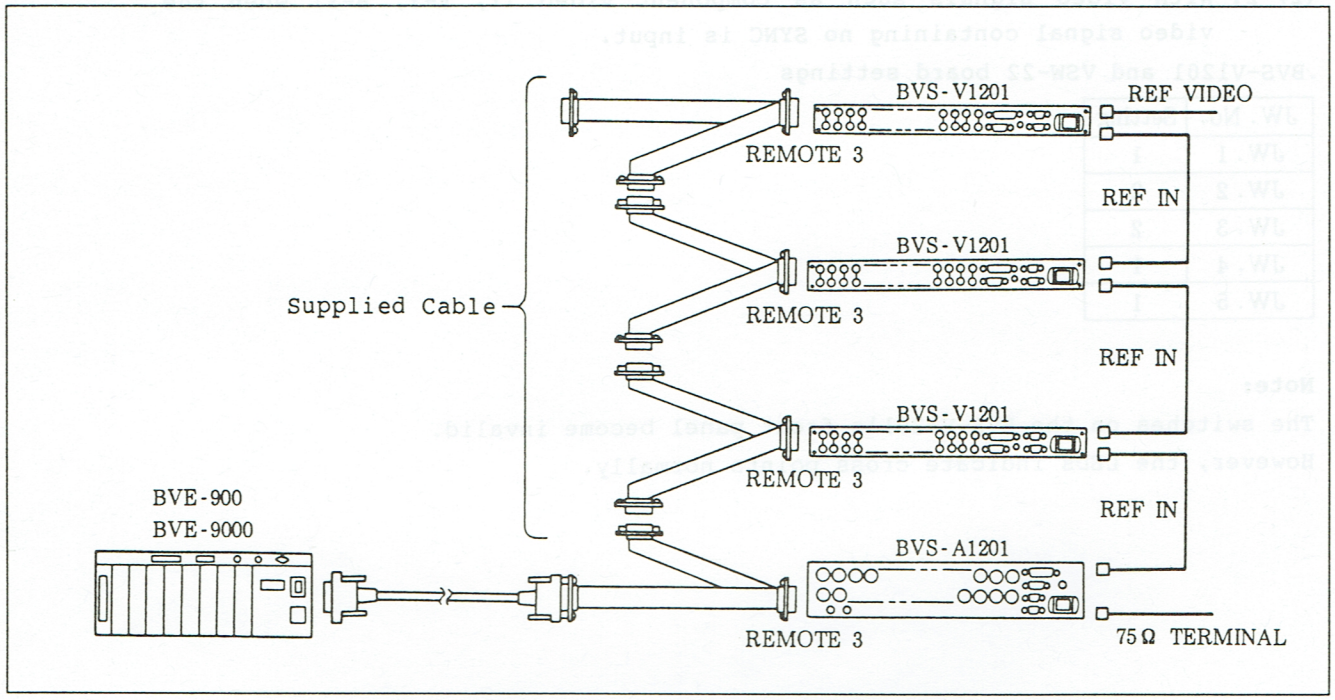
1-5-1. Connecting as a Monitor Switcher for the BVE-900/BVE-9000

(1) Connection methord

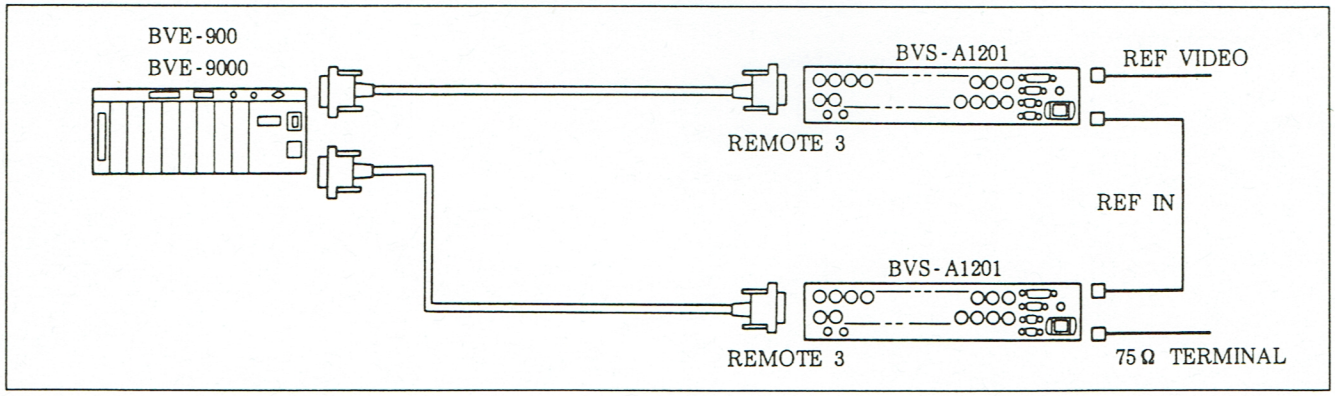
.For composite video



.For component video



.For four-channel audio



(2) Post connection settings

(2)-1. Control values from the BVE-900 and BVE-9000 must be set as follows.

.BVS-V1201 and VSW-22 board settings

JW. No.	Setting
JW. 1	1
JW. 2	2
JW. 3	1
JW. 4	1
JW. 5	1

.BVS-A1201 and ASW-18 board settings

JW. No.	Setting
JW. 1	1
JW. 2	2
JW. 3	1

(2)-2. With video signals such as component video (Y, R-Y, B-Y) when the video signal containing no SYNC is input.

.BVS-V1201 and VSW-22 board settings

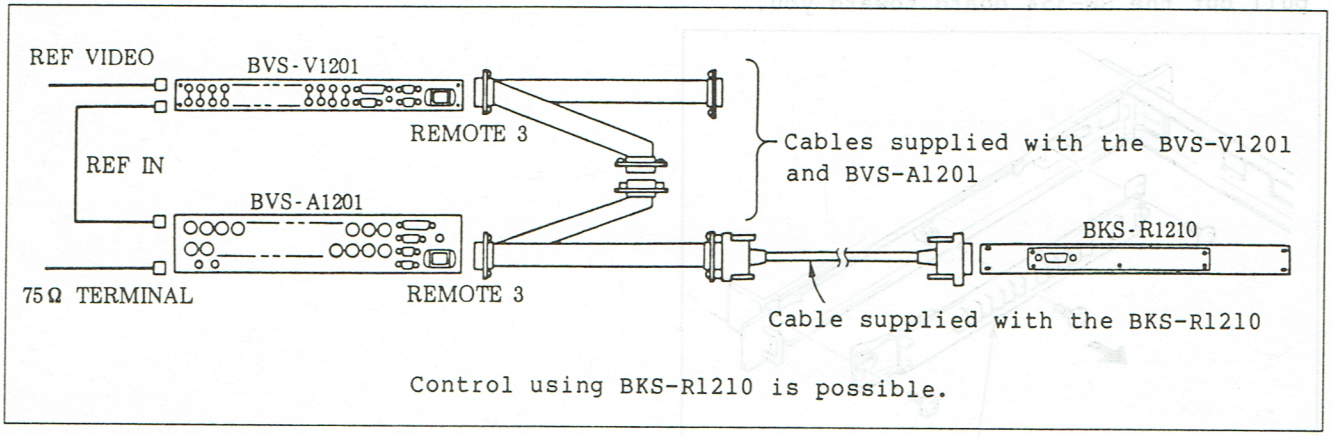
JW. No.	Setting
JW. 1	1
JW. 2	2
JW. 3	2
JW. 4	1
JW. 5	1

Note:

The switches on the BVS-V1201's front panel become invalid.
However, the LEDs indicate cross points normally.

1-5-2. Using BVS-V1201 and BVS-A1201 Independently

(1) Connection method



Control using BKS-R1210 is possible.

(2) Post connection settings

.BVS-V1201 and VSW-22 board settings

JW. No.	Setting
JW. 1	1
JW. 2	1
JW. 3	1
JW. 4	1
JW. 5	1

.BVS-A1201 and ASW-18 board settings

JW. No.	Setting
JW. 1	1
JW. 2	1
JW. 3	1

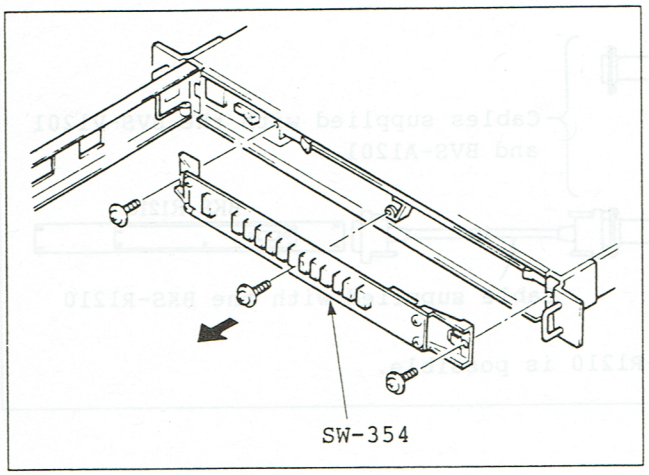
Note:

.When the switches on the BVS-V1201's front panel and the BKS-R1210 are pressed simultaneously at different cross points, before the push switch take precedence and become effective to remove your hand.

.Audio (BVS-A1201) channels cannot be selected separately using the BVS-V1201's front panel and the BKS-R1210.

1-6. HOW TO REMOVE THE SW-354 BOARD

.Open the front panel.
.Remove the three screws (+PSW3x6) and pull out the SW-354 board toward you.

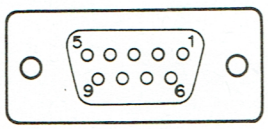


1-7. INPUT/OUTPUT SIGNALS OF THE CONNECTOR

The input/output signals of the connector on the connector panel are the following.

1-7-1. BVS-V1201

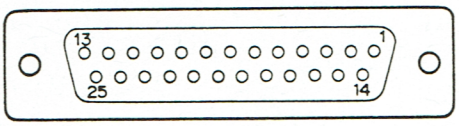
REMOTE 1 and 2 (D-SUB 9PIN FEMALE)



-EXT VIEW-

PIN No.	Signal	Function (RS422A)
1	FG	FRAME GROUND
2	TA	TRANSMIT A (−)
3	RB	RECEIVE B (+)
4	RC	RECEIVE SIGNAL COMMON
5	SP	
6	TC	TRANSMIT SIGNAL COMMON
7	TB	TRANSMIT B (+)
8	RA	RECEIVE A (−)
9	FG	FRAME GROUND

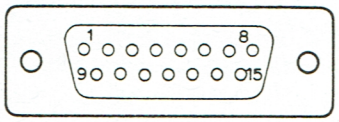
REMOTE 3. (D-SUB 25PIN FEMALE)



-EXT VIEW-

PIN No.	Signal	Function
1	A2-A	AUDIO 2 SELECT BINARY DATA: BUS
2	A2 ONLY	ONLY AUDIO 2 SELECT BUS
3	+5 V-A	AUDIO +5 V OUTPUT
4	VI-STB	VERTICAL INTERVAL STROBE: BUS
5	A1-A	AUDIO 1 SELECT BINARY DATA: BUS
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	CHANNEL SELECT: BUS
10	A1 ONLY	ONLY AUDIO 1 SELECT BUS
11	V ONLY	ONLY VIDEO SELECT BUS
12	KEY ON	KEY ON: INPUT
13	V-A	VIDEO SELECT BINARY DATA: BUS
14	A2-B	AUDIO 2 SELECT BINARY DATA: BUS
15	A2-C	
16	A2-D	
17	+5 V-V	VIDEO +5 V OUTPUT
18	GND	GND
19	CH-1	CHANNEL SELECT: BUS
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	VIDEO SELECT BINARY DATA: BUS
24	V-C	
25	V-B	

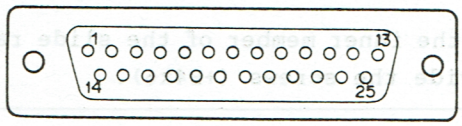
TALLY (D-SUB 15PIN MALE)



-EXT VIEW-

PIN No.	Signal	Function
1	TALLY 1	MAKE A POINT OF CONTACT TO TALLY COMMON
2	TALLY 2	
3	TALLY 3	
4	TALLY 4	
5	TALLY 5	
6	TALLY 6	
7	TALLY 7	
8	TALLY 8	
9	TALLY 9	
10	TALLY 10	
11	TALLY 11	
12	TALLY 12	
13	TALLY COM	
14	SPARE	GND
15	GND	

SW-354 Board (D-SUB 25PIN MALE)



-EXT VIEW-

PIN No.	Signal	Function
1		
2	A2 ONLY	GREEN BUTTON : OUTPUT
3	+5 V IN	+5 V FOR GREEN TALLY
4		
5	A1-A	GREEN TALLY BINARY DATA: INPUT
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	BUTTON BINARY DATA: OUTPUT
10	A1 ONLY	GREEN BUTTON : OUTPUT
11	V ONLY	RED BUTTON : OUTPUT
12	KEY ON	KEY ON SIGNAL: OUTPUT
13	V-A	RED TALLY BINARY DATA: INPUT
14		
15		
16		
17	+5 V IN	+5 V FOR RED TALLY
18	GND	
19	CH-1	BUTTON BINARY DATA: OUTPUT
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	RED TALLY BINARY DATA: INPUT
24	V-C	
25	V-B	

1-8. CONNECTOR

Function name of the connector on the connector panel	Part number of the connector and its name on the cable side
REMOTE 1, 2	RCC-5G
	RCC-10G (Remote control cable 9P) 1-555-873-23
	RCC-30G
REMOTE 3	Interface cable (BKS-R1210) Connector code 1-574-883-11
TALLY	1-558-592-11

1-9. RACK MOUNTING

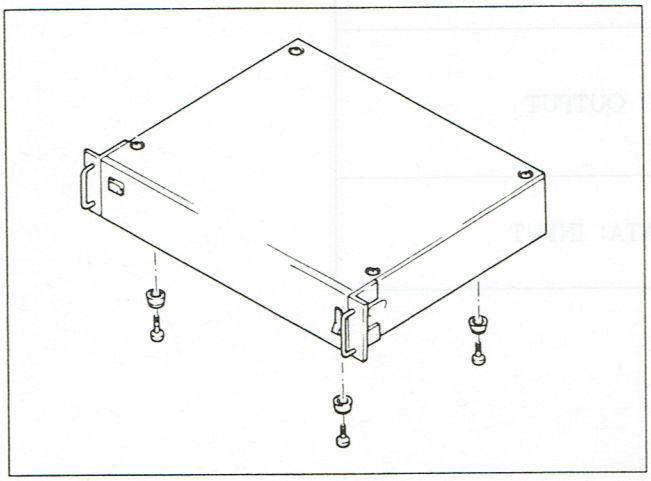
.Mounting Onto a 19-inch Standard Rack

<Recommended products>
Slide rail: RACKMOUNT SUDES MODEL C-305-22
made by ACCURIDE.
SLIDE LENGTH 22 INCH. (2)
Bracket : #5516-2 made by ACCURIDE. (4)
<Prepare the following>
Install the inner member by six screws
(+B4x6)

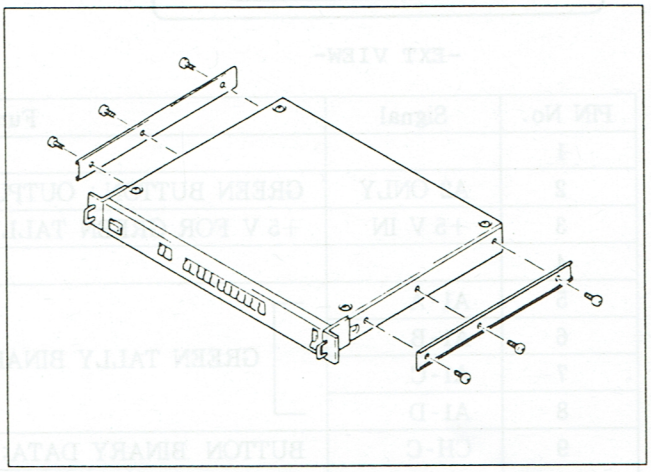
Eight leaf nuts (3 holes)
(Sony Part No. 3-651-784-01)
Fix the bracket to eight screws ① (+B4x8)
Fix the bracket to eight screws ②
(The hexagon socket read bolt M4x16)
Install the Rack mounting by four screws
(+RK5x16)

Four washers (Sony part No. 2-297-913-01)
L wrench (3 mm)

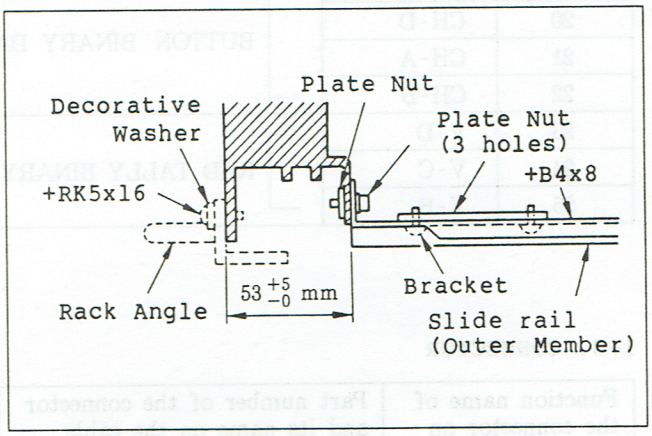
1. Remove the four feet from the bottom of the unit.



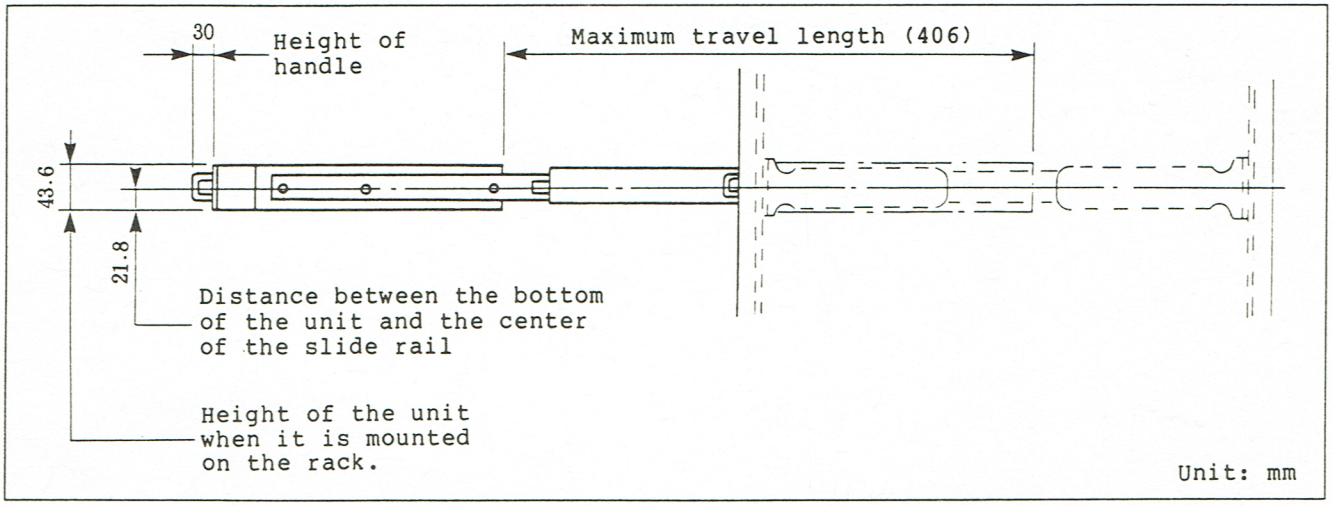
2. Attach the inner member of the slide rail to provide the screws (+B4x6).



3. Tighten the bracket and the outer member of the slide rail temporarily with the eight screws (+B4x8) and with the four plate nuts which have 3 holes.
4. Attach the bracket of the outer member of the slide rail to the rack, and adjust the dimension between the head of the slide rail and the koutside of the rack so that it meets the specification.



When BVS-V1201 is mounted on the rack, the maximum travel length is as follows.



1-10. ACCESSORIES

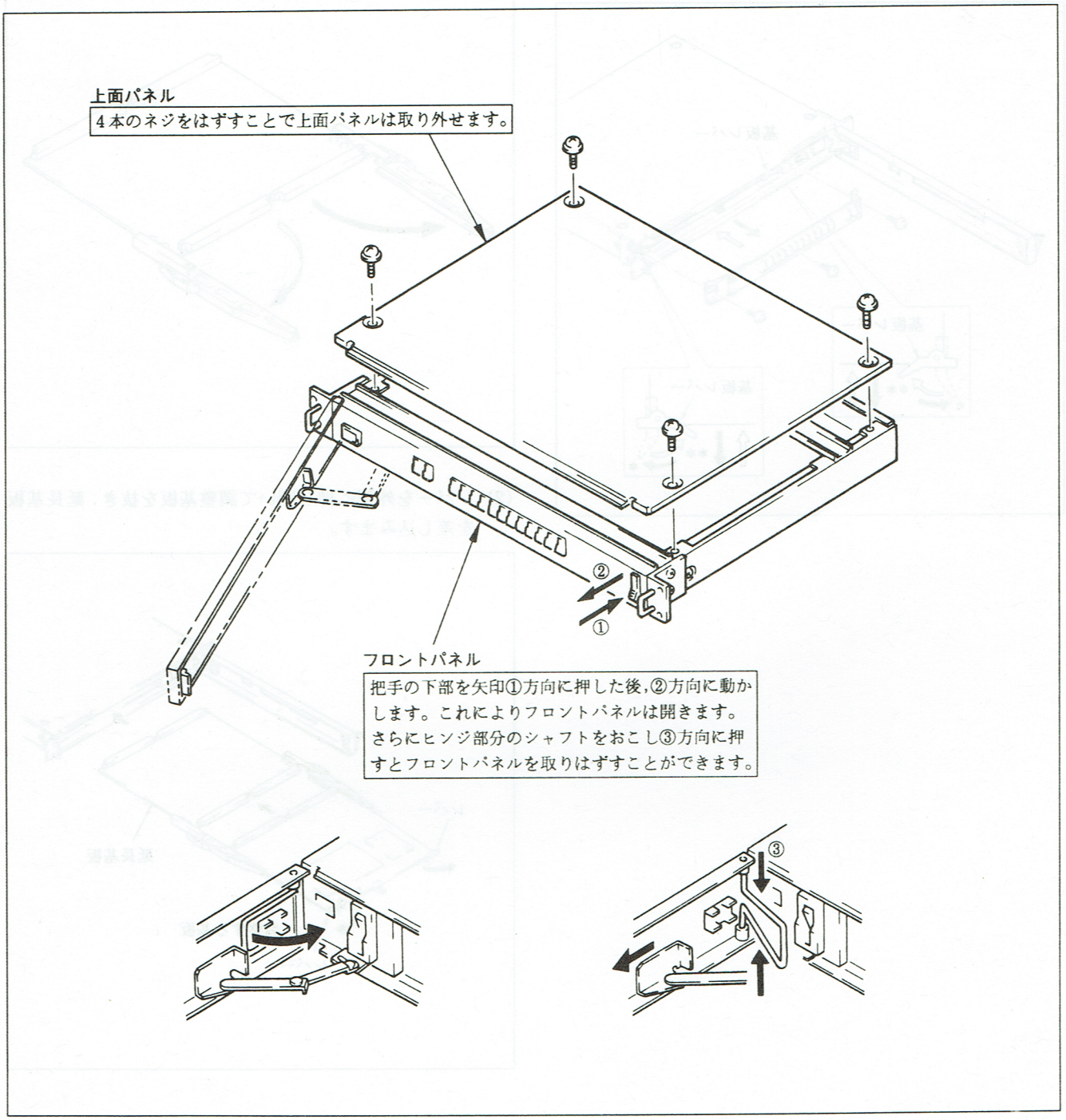
.Operation Manual	(1)
.Maintenance Manual	(1)
.D sub 25P Harnes	(1)
.Extension board	(1)
.Power cable	(3)
.Label	(1)
• Plug holder	(2)

第2章
サービスインフォメーション

2−1. コンソールからの取り外し

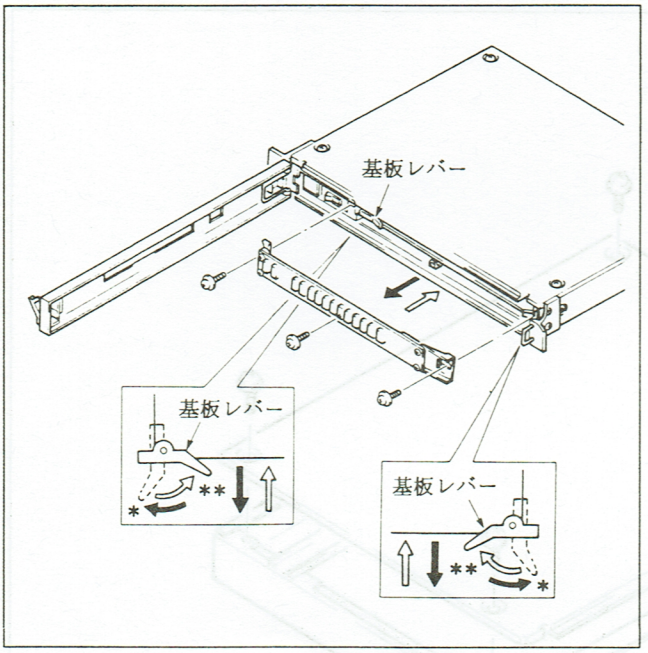
・接続されているコネクターを抜き，コンソールから静かに引き抜いて下さい。

2−2. 外装の開閉／取り外し



2−3. カバー基板の取り付け／取り外し方

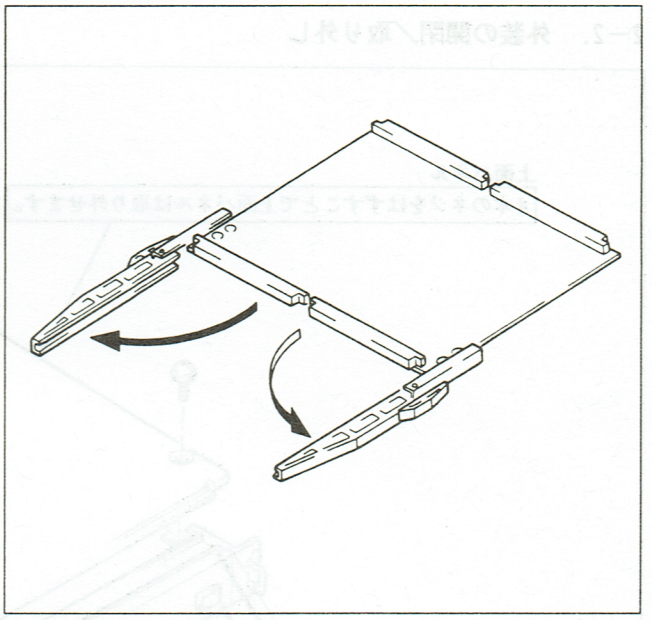
- 基板レバーを矢印＊の方向へ押し手前に引くと，取り外すことができます。
- 基板レバーガイド，基板ガイドに沿って，挿入します。基板レバーを矢印＊＊方向に倒すと基板を取り付けることができます。



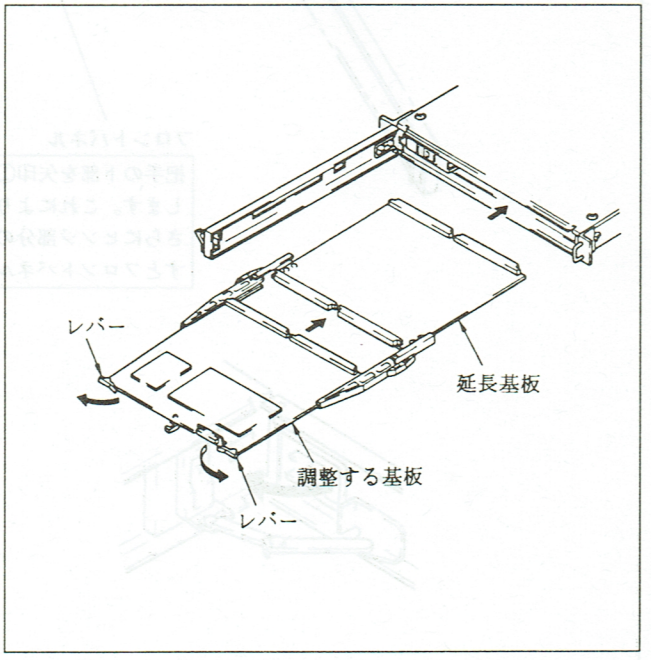
2−4. サービス方法

- VSW-22基板の調整方法

(1) 延長基板のレールを開きます。



(2) レバーを外側に押し開いて調整基板を抜き，延長基板を差し込みます。

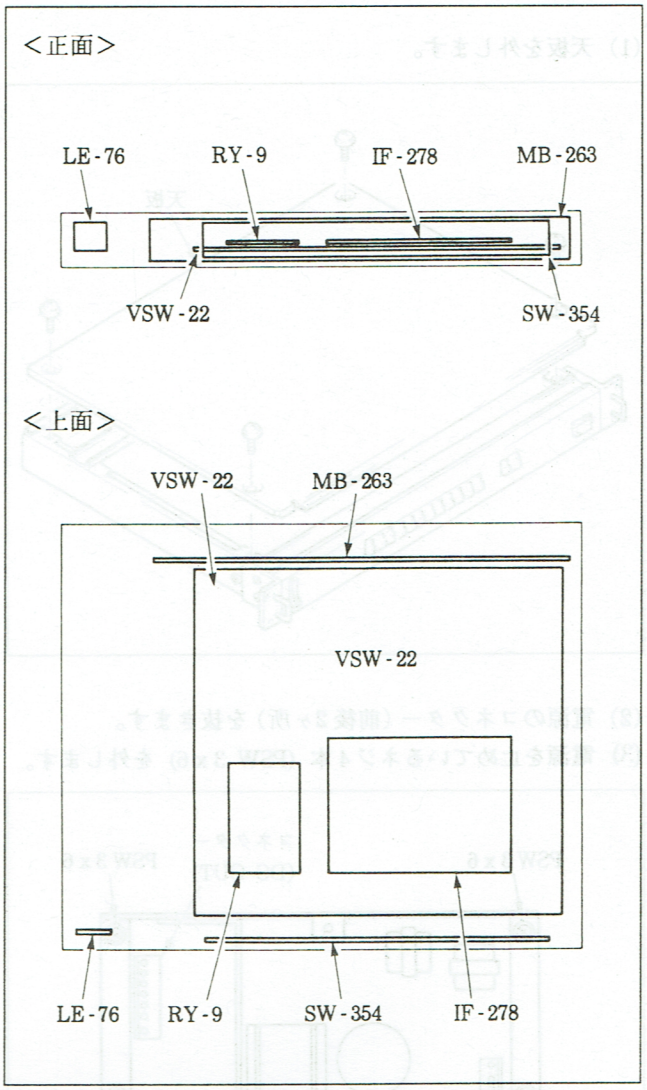


2－5．回路構成

2－5－1．BVS-V1201

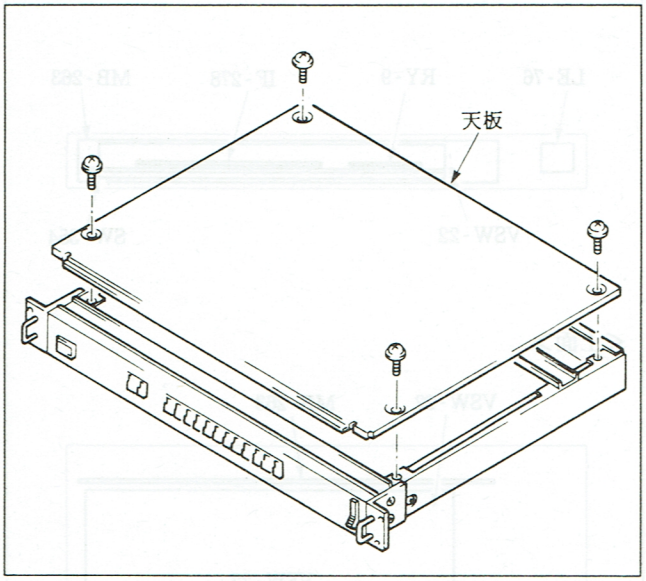
名　称	機　能
VSW-22	VIDEO SWITCH BOARD
MB-263	MOTHER BOARD
IF-278	SERIAL INTERFACE BOARD
RY-9	TALLY BOARD
LE-76	LED BOARD
SW-354	SWITCH BOARD

2－6．基板配置図



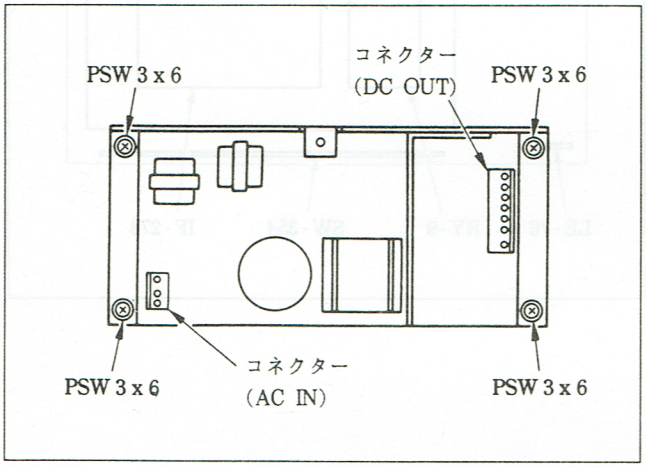
2−7. 電源の取り外し

(1) 天板を外します。



(2) 電源のコネクター（前後2ヶ所）を抜きます。

(3) 電源を止めているネジ4本 (PSW 3x6) を外します。



2−8 サービス部品

1. 回路図，分解図，電気部品リスト中で⚠及び　　で囲まれた部品は，安全性を維持するために重要な部品です。従ってこれらの部品を交換する時には必ず指定の部品と交換して下さい。

2. パーツセンターから供給される部品は，実際にセットに使用している部品と形状等が異なることが時々あります。これらは「部品の共通化」等によるものです。

3. 分解図，電気部品リスト中SP欄がOで示されている部品は交換頻度が低い部品ですので，在庫していないことがあり，納期が長くなることがあります。

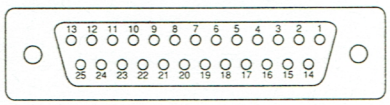
2-9. BVS-V1201/A1201 パラレルリモートコントロール情報

BVS-V1201/A1201におけるパラレルリモートコントロールについて以下に説明します。

パラレルリモートコントロールはREMOTE-3コネクター(D-SUB 25pin)を使用して行ないます。
REMOTE-3コネクターには複数の外部機器（:外部コントロール機器）を同時に接続(25pinパラレル接続)することができます。
本機は接続されたどの外部機器からでも制御できるように設計されています。
また接続ケーブルの長さは数百メートルまで問題なく動作するように設計されています。
(通常の使用条件では接続ケーブルの長さによる問題はありません。)

次にREMOTE-3コネクターの各ピンの機能について説明します。

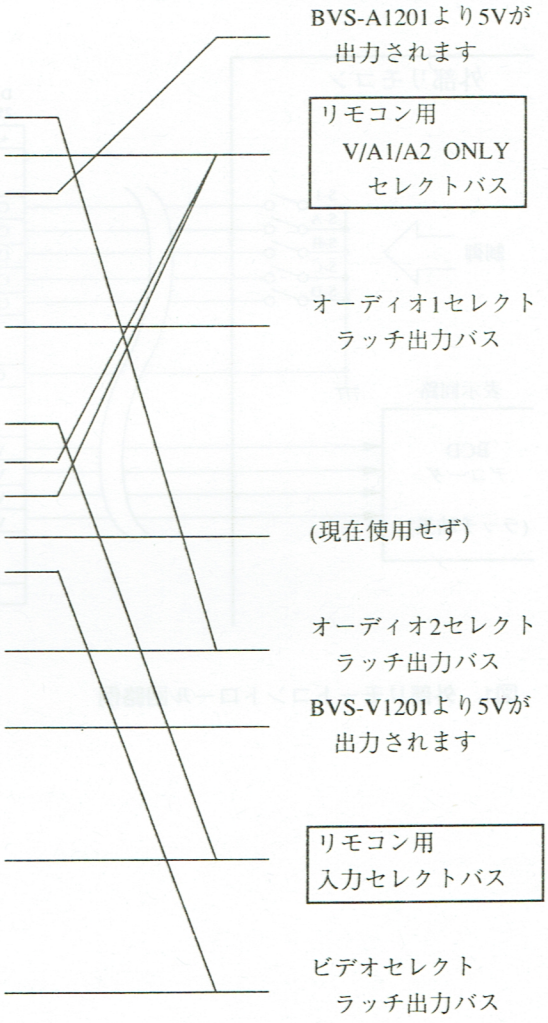
REMOTE-3 (D-SUB 25pin FEMALE)



— EXT VIEW —

PIN No.	信号名	機　能
1	A2-A	AUDIO 2 SELECT BINARY DATA: BUS
2	A2 ONLY	ONLY AUDIO 2 SELECT BUS
3	+5V-A	AUDIO +5V OUTPUT
4	VI-STB	VERTICAL INTERNAL STROBE: BUS
5	A1-A	AUDIO 1 SELECT BINARY DATA: BUS
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	CHANNEL SELECT: BUS
10	A1 ONLY	ONLY AUDIO 1 SELECT BUS
11	V ONLY	ONLY VIDEO SELECT BUS
12	KEY ON	KEY ON: INPUT
13	V-A	VIDEO SELECT BINARY DATA: BUS
14	A2-B	AUDIO 2 SELECT BINARY DATA: BUS
15	A2-C	
16	A2-D	
17	+5V-V	VIDEO +5V OUTPUT
18	GND	GND
19	CH-1	CHANNEL SELECT: BUS
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	VIDEO SELECT BINARY DATA: BUS
24	V-C	
25	V-B	

機能概要



本機を外部機器から制御する方法は次の２通りがあります。

1. リモートコントロール用入力セレクトバスで制御する方法
   外部機器から制御する場合には"リモコン（:リモートコントロール）用入力セレクトバス"を制御します。入力セレクトバスを制御すると,本機に内蔵するラッチ回路により指定されたチャンネルに入力信号を切り替えます。また同時にステータス(ラッチ出力)をリモコンラインに出力します。
   BVS-V1201はビデオセレクトラッチ出力バスに,BVS-A1201はオーディオ１およびオーディオ２の各セレクトラッチ出力バスにステータスを送り出しています。入力切り換えボタンのランプ表示は,このステータスを元に表示しています。（厳密には実際の入力信号切り換えはこのステータス信号をさらにＶタイミングで取り込みラッチして実行しています。）

   REMOTE-3コネクターの"リモコン用 V/A1/A2 ONLY セレクトバス（Pin No.2/10/11）"は,ビデオとオーディオの選択を別々に制御する必要があるときに使用します。この信号を制御するときは,"リモコン用入力セレクトバス（Pin No.9/19/20/21/22）"より先にONにしておく必要があります。
   制御コードについては図２を参照してください。

   図１は外部機器から制御するときの簡単な回路図例です。
   また入力チャンネルと各バスの制御コードとの関係を図２に示します。

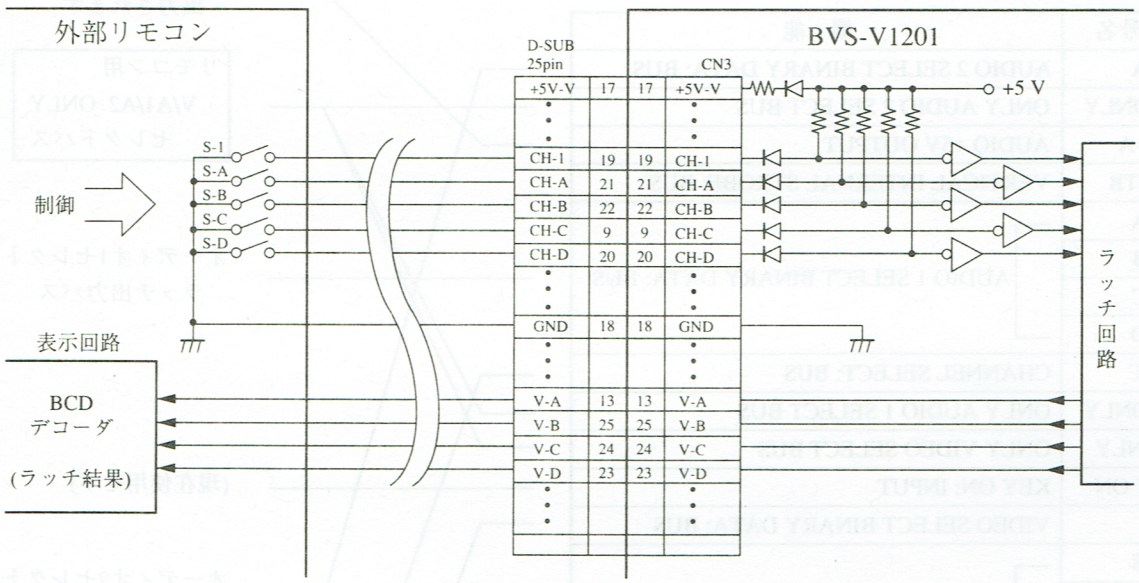


図1　外部リモートコントロール回路例

図１に示すスイッチ（S-1～S-D）はオープンコレクタのトランジスタやリレー等で構成します。
本機のラッチ回路は,入力信号がオールHighの状態(スイッチはオールOFFの状態)からどれかがLowに立ち下がった瞬間に動作します。スイッチをONさせる時間は0.3秒位が適当です。その後はスイッチをオールOFFにしておきます。スイッチをONのままホールドすると入力信号がオールHighとならないので次の入力信号の選択ができません。

		入力選択チャンネル											
		1*	2	3	4	5	6	7	8	9	10	11	12
外部制御コード	CH-1	L											
	CH-A		L		L		L		L		L		L
	CH-B			L	L			L	L			L	L
	CH-C					L	L	L	L				
	CH-D									L	L	L	L
	バイナリ コード	0	1	2	3	4	5	6	7	8	9	A	B

図2　入力チャンネルと制御バスのコード

本機のCH-1制御ラインは特別で,"入力１*"を選択するときに必要なラインです。
"入力１"を選択する際,コードはオールHigh(CH-A～CH-D)であるためラッチパルスが発生しません。
(ラッチパルスは信号のHigh→Lowへの立ち下りをトリガーとして使用しています。)
よって,入力1を選択するときこのCH-1制御ラインでラッチパルスを発生するようにしています。

2. ステータス信号を直接制御する方法
パラレルリモートコントロールのもう一つの方法としてステータス信号を直接制御する方法があります。
制御する方法は本機に搭載されている下記基板のジャンパースイッチ設定を換えることで行います。
・ BVS-V1201;VSW-22基板 → ｼﾞｬﾝﾊﾟｰｽｲｯﾁ: JW-2(CONTROL)を<EXT>側に設定する。
(外部制御モード)
・ BVS-A1201;ASW-18F基板→ ｼﾞｬﾝﾊﾟｰｽｲｯﾁ: JW-2(CONTROL)を<EXT>側に設定する。
(外部制御モード)

本機を外部制御モードにすると,ステータス出力のトランジスタは全てオープン状態となります。そしてプルアップ抵抗により各バスラインはHighの状態になります。この状態で各バスラインを制御(必要なビットをGNDに落とす)すればビデオ／オーディオ１／オーディオ２はそれぞれ任意に選択することができます。
各バスラインの制御信号は常に制御側(外部機器)でホールドしておく必要があります。外部制御モードのときは本機の前面パネルのランプは表示のみとなります。(入力切り換えボタンを操作してもランプ表示は反応しません。)

SECTION 2
SERVICE INFORMATION

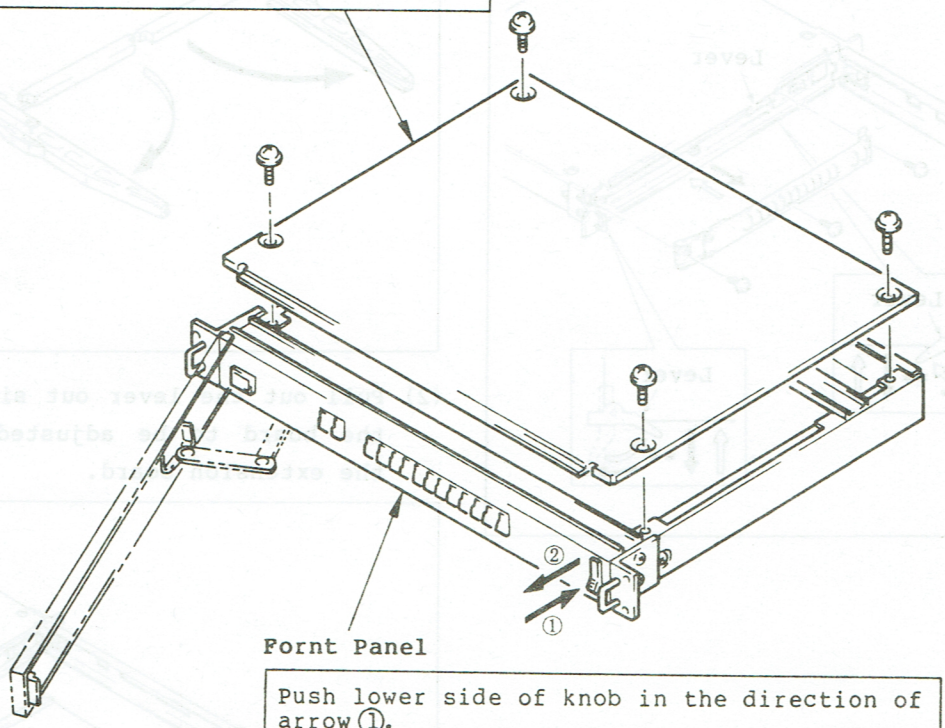
2-1. REMOVAL FROM THE CONSOLE

.Remove all connectors and slowly pull out the from the console.

2-2. OPENING/REMOVAL OF CABINET

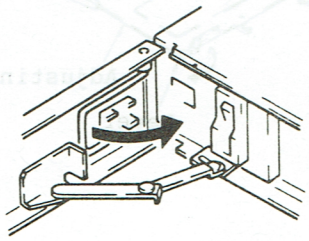
Top Plate

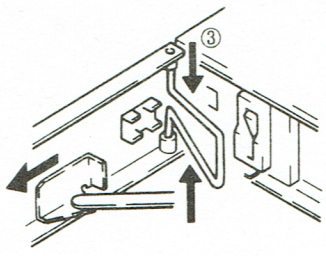
Loosen the four fixing screws and remove the top plate.



Fornt Panel

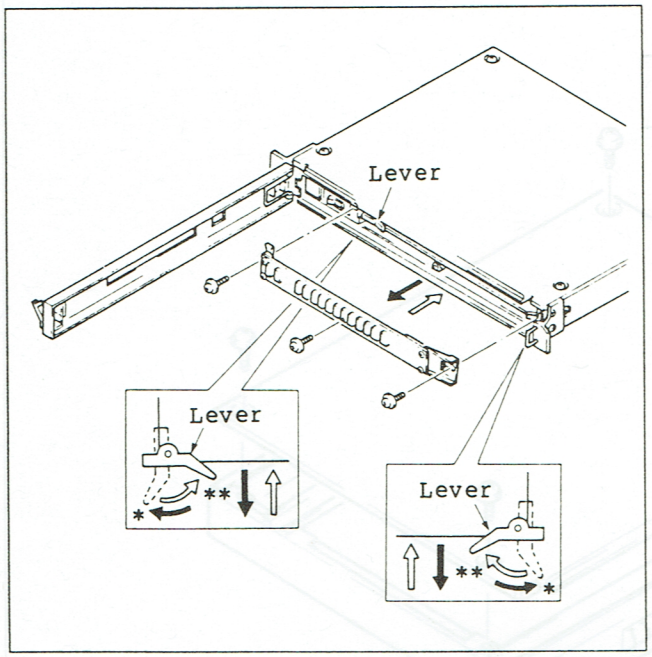
Push lower side of knob in the direction of arrow ①.
Move knob in the direction of arrrow ②.
Then pull up the shaft of the hinge portion and push it in the diection of ③.
The front panel can be remove.





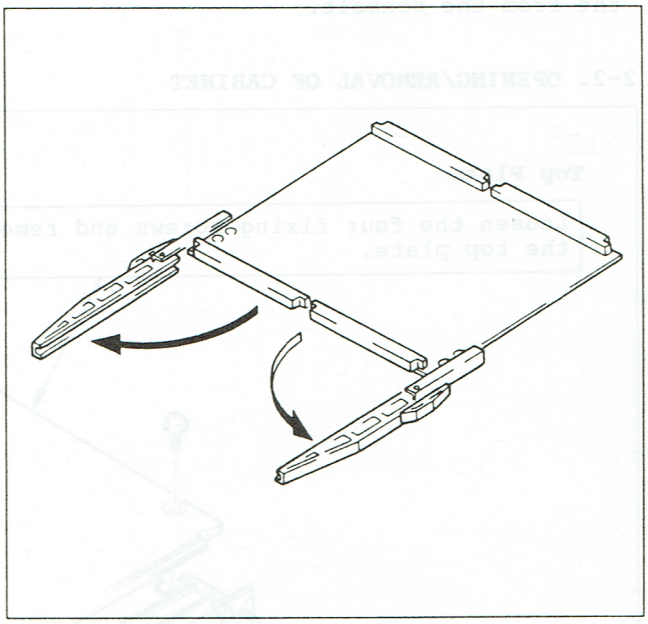
2-3. REMOVAL/INSTALL PROCEDURE

.Pushing in the direction of the *, pull out by the lever.
The card board can be removed.
.Insert the board along with the lever in the direction of **, the card can be installed.

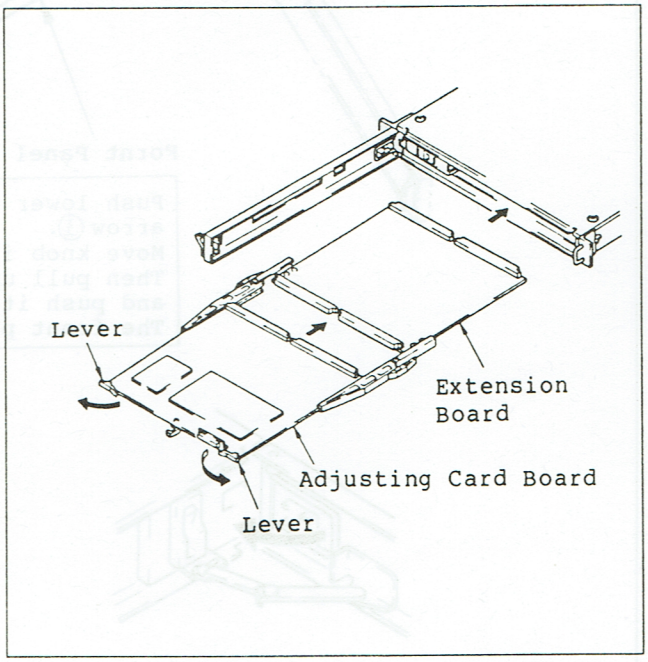


2-4. HOW TO MAINTENANCE

.Adjusting card board (VSW-22 board)
(1) Open the rail of the extension board.



(2) Pull out the lever out side and remove the board to be adjusted then attach the extension board.

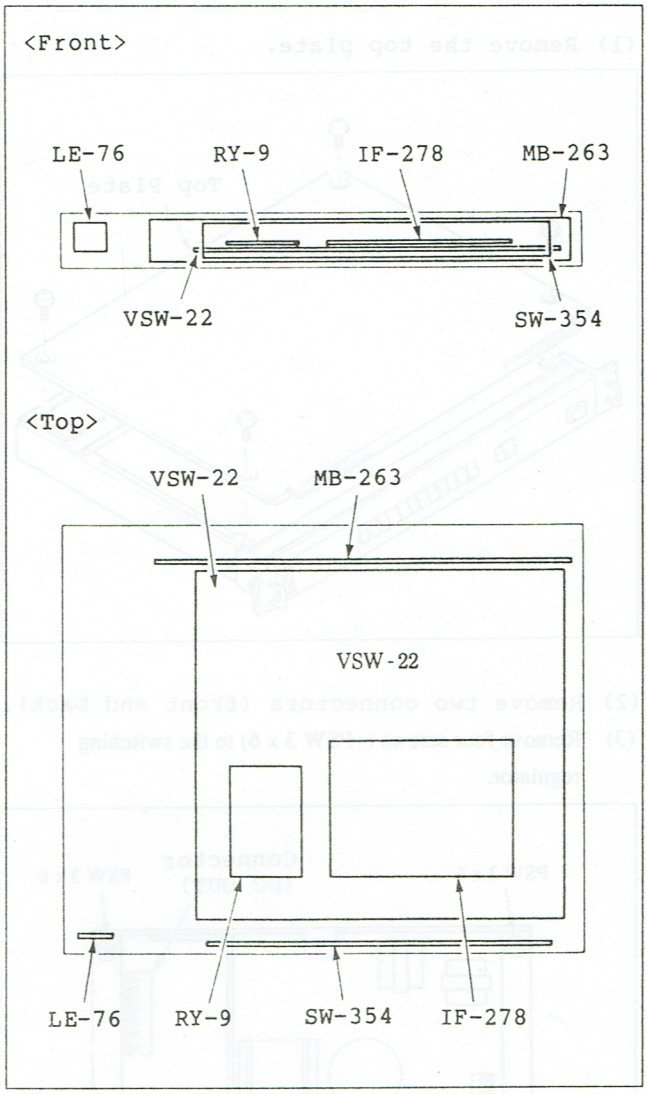


2-5. CIRCUIT CONFIGURATION

2-5-1. BVS-V1201

Board Name	Functions
VSW-22	VIDEO SWITCH BOARD
MB-263	MOTHER BOARD
IF-278	SERIAL INTERFACE BOARD
RY-9	TALLY BOARD
LE-76	LED BOARD
SW-354	SWITCH BOARD

2-6. LAYOUT OF THE PRINT BOARD

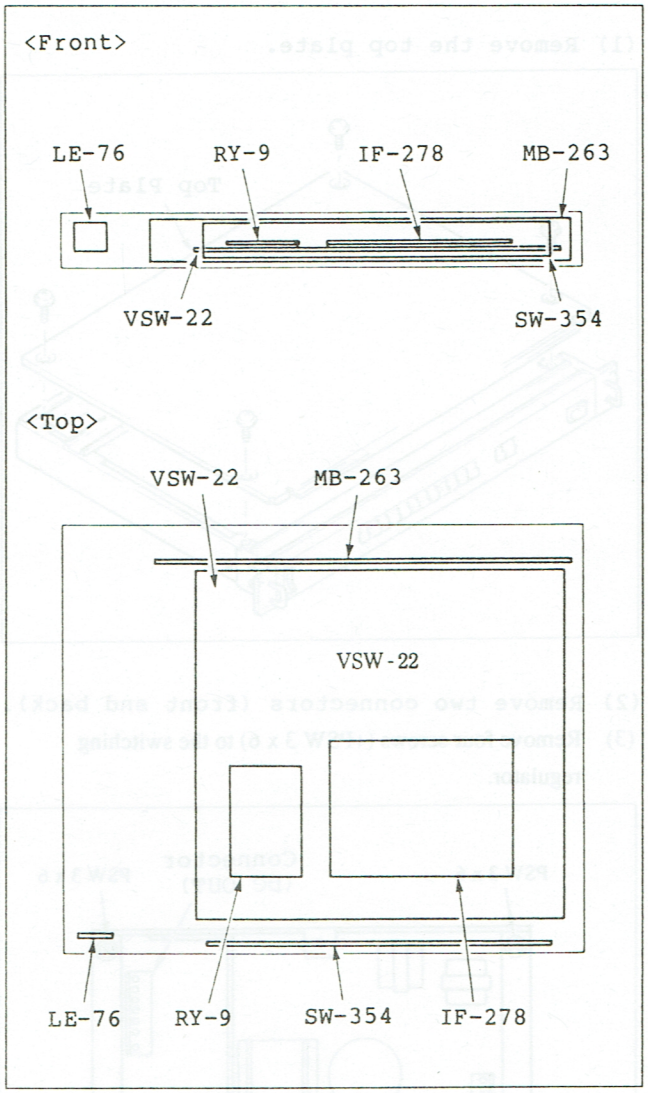


2-5. CIRCUIT CONFIGURATION

2-5-1. BVS-V1201

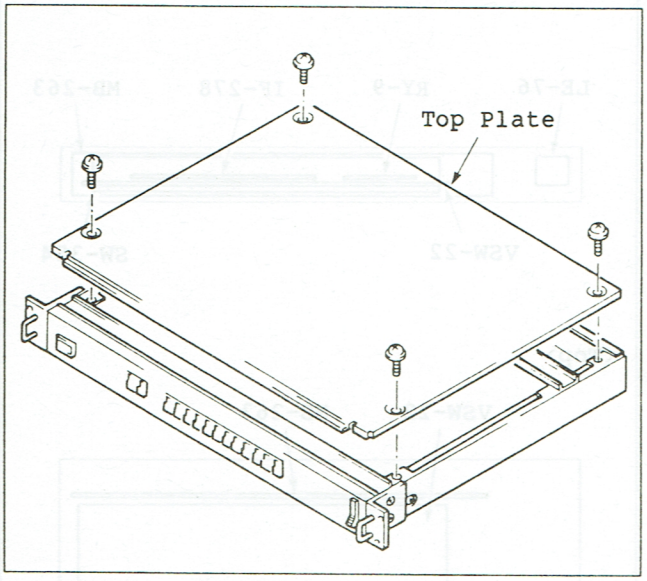
Board Name	Functions
VSW-22	VIDEO SWITCH BOARD
MB-263	MOTHER BOARD
IF-278	SERIAL INTERFACE BOARD
RY-9	TALLY BOARD
LE-76	LED BOARD
SW-354	SWITCH BOARD

2-6. LAYOUT OF THE PRINT BOARD



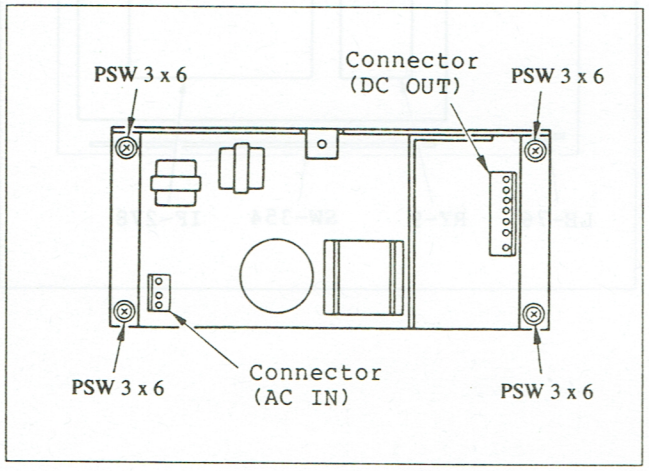
2-7. HOW TO REMOVE THE SWITCHING REQURATOR

(1) Remove the top plate.



(2) Remove two connectors (front snd back).

(3) Remove four screws (+PSW 3 x 6) to the switching regulator.



2-8. NOTES ON REPAIR PARTS

(1) Safety Related Components Warning

Components identified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulle tins and service manual supplements published by Sony.

(2) Standardization of Parts

Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".

This manual's explded views and electrical spare parts list are indicating the part numbers of "the standardized genuine parts at present".

(3) Stock of Parts

Parts marked with "o" SP (supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked withe "o" will be processed, but allow for additional delivery time.

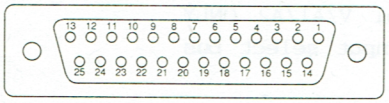
2-9. BVS-V1201/A1201 PARALLEL REMOTE CONTROL INFORMATION

The BVS-V1201/A1201 parallel remote control will be explained below.

A REMOTE-3 connector (D-SUB 25pin) is used for the parallel remote control. The REMOTE-3 connector can be connected a multiple of external devices (external controllers) at the same time (25pin parallel connections).
The unit is designed to be operated by any one of the connected external devices. Moreover, the unit is designed to be operated using a connecting cable having a length of several hundreds of meters without any problems. (The unit will have no problems using a long connecting cable under normal operating conditions.)

Next, the function of each REMOTE-3 connector pin will be explained below.

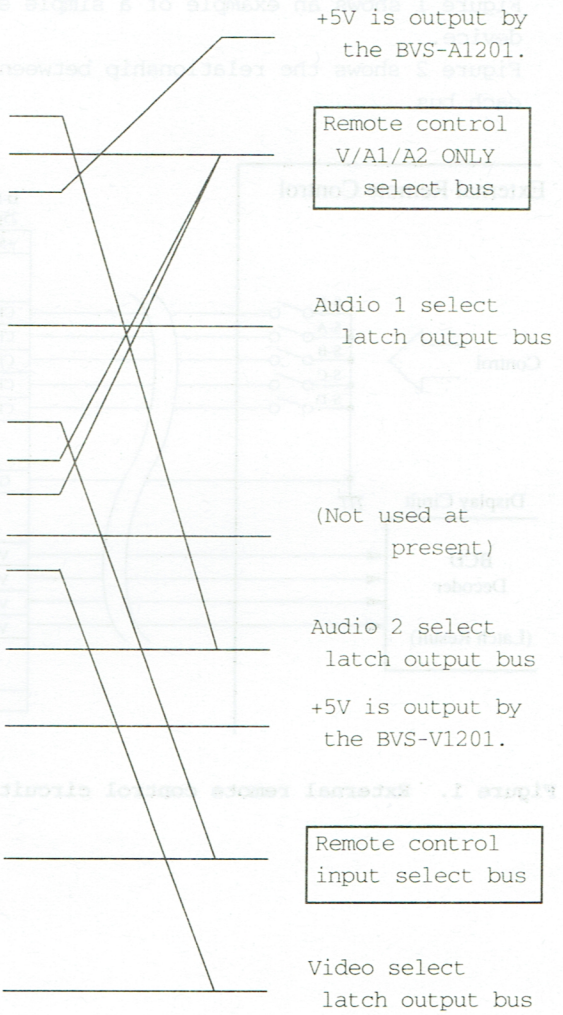
REMOTE-3 (D-SUB 25pin FEMALE)



— EXT VIEW —

PIN No.	Signal	Function
1	A2-A	AUDIO 2 SELECT BINARY DATA: BUS
2	A2 ONLY	ONLY AUDIO 2 SELECT BUS
3	+5V-A	AUDIO +5V OUTPUT
4	VI-STB	VERTICAL INTERNAL STROBE: BUS
5	A1-A	AUDIO 1 SELECT BINARY DATA: BUS
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	CHANNEL SELECT: BUS
10	A1 ONLY	ONLY AUDIO 1 SELECT BUS
11	V ONLY	ONLY VIDEO SELECT BUS
12	KEY ON	KEY ON: INPUT
13	V-A	VIDEO SELECT BINARY DATA: BUS
14	A2-B	AUDIO 2 SELECT BINARY DATA: BUS
15	A2-C	
16	A2-D	
17	+5V-V	VIDEO +5V OUTPUT
18	GND	GND
19	CH-1	CHANNEL SELECT: BUS
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	VIDEO SELECT BINARY DATA: BUS
24	V-C	
25	V-B	

Outline of the Function



There are the following two methods of controlling the unit by external devices.

1. Input select bus control method for remote control
   Control the "input select bus for remote control" to control the unit by an external device. When the input select bus is controlled, the built-in latch circuit switches the input signal to the designated channel. Also, the status (latch output) is output to the remote control line simultaneously.
   The BVS-V1201 sends out the status to the video select latch output bus.
   The BVS-A1201 sends out the status to each select latch output bus of audio 1 and audio 2.
   The indicator of the input select button is based on these statuses.
   (Strictly speaking, the actual input signal switching is performed by further fetching these status signals, at V timing, and latching them.)

   The remote control V/A1/A2 ONLY select bus (Pin No. 2/10/11) of the REMOTE-3 connector is used if the video and audio selections need to be controlled separately. When this signal is controlled, the remote control V/A1/A2 ONLY select bus needs to be set to ON, prior to the remote control input select bus (Pin No. 9/19/20/21/22).
   For the control code, refer to Figure 2.

   Figure 1 shows an example of a simple schematic diagram of control by an external device.
   Figure 2 shows the relationship between the input channel and the control code of each bus.

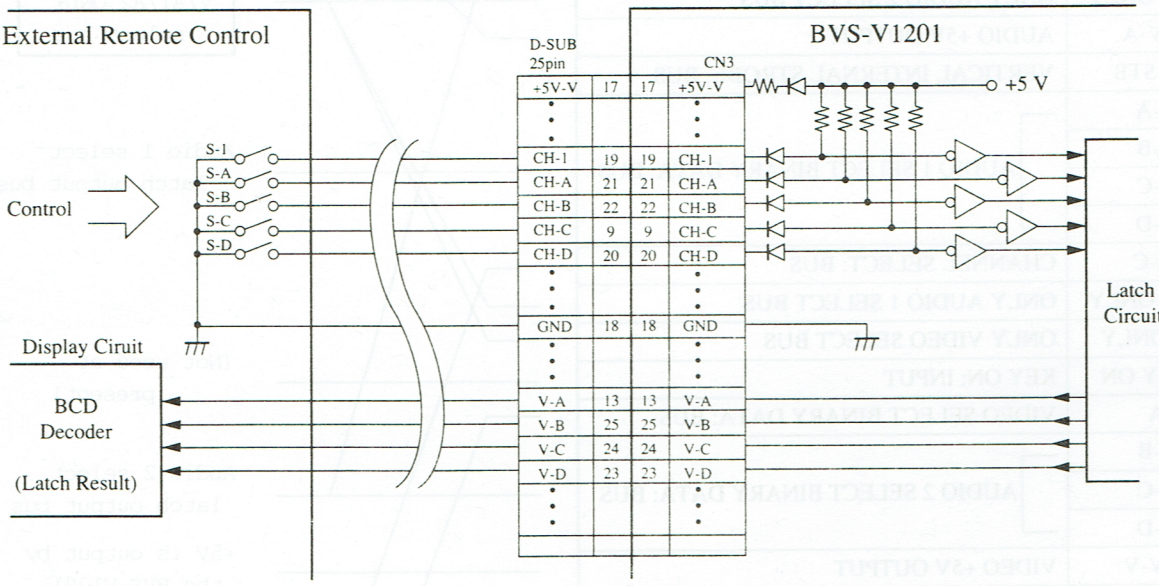


Figure 1. External remote control circuit example

The switches (S-1 to S-D) shown in Figure 1 are comprised of transistors, relays, and other devices of the open collector.
The latch circuit of the unit functions immediately after one of the input signals, the status of which are all high (the all switches are OFF), makes high to low transitions. An appropriate time for switching ON is about 0.3 seconds. After that, turn off all switches. If any one of the switches remain ON, not all the input signals are set high; therefore, the selection of the following input signal cannot be made.

		Input Select Channel											
		1*	2	3	4	5	6	7	8	9	10	11	12
Output Control Code	CH-1	L											
	CH-A		L		L		L		L		L		L
	CH-B			L	L			L	L			L	L
	CH-C					L	L	L	L				
	CH-D									L	L	L	L
	Binary Code	0	1	2	3	4	5	6	7	8	9	A	B

Figure 2. Input channel and control bus code

The CH-1 control line of the unit is a special line and needs to be used when "input 1* " is selected. When "input 1" is selected, the latch pulse is not generated because the codes are all high (CH-A to CH-D).
(The latch pulse uses the high to low transition as a trigger.)
Therefore, it is made so that, when input 1 is selected, the latch pulse is generated on this CH-1 control line.

2. A method for directly controlling status signal
There is another parallel remote control method, which directly controls the status signal.
The status signal is controlled by changing the jumper switch settings on the following board which is mounted on the device.

- BVS-V1201; VSW-22 board → Jumper switch: Set JW-2 (CONTROL) to <EXT> side (output control mode)
- BVS-A1201; ASW-18F board → Jumper switch: Set JW-2 (CONTROL) to <EXT> side (output control mode)

When the device is set to output control mode, the transistors of the status output all become open state. Each bus line becomes high state by the pull-up resistance. When each bus line is controlled (necessary bits are connected with GND) in this state, video/audio 1/audio 2 can be selected separately.
The control signal of each bus line needs to be held at the control side (external device) at all times. In output control mode, the indicator on the front panel of the unit only displays. (Even if the input select button is pressed, the indicator has no reaction.)

第 3 章
電気調整要項

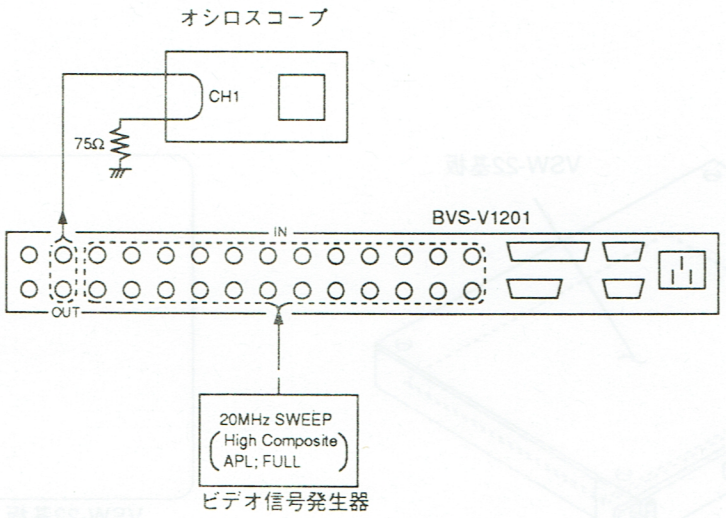
[使用機器]

- 75Ω終端抵抗器
- オシロスコープ　：　100MHz以上の特性のあるもの
- ビデオ信号発生器：　テクトロニクス1410又は同等品

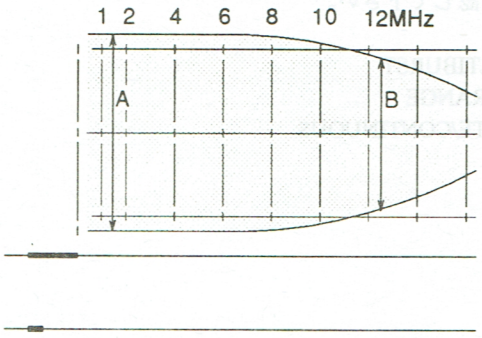
[接続]

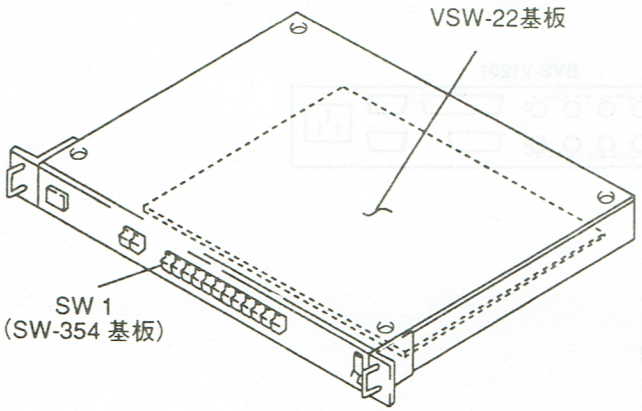
ビデオ信号発生器の※1 SWEEP信号（※2 High ※3 Composite APL; ※4 FULL）をオシロスコープのCH-1へ接続し、75Ω終端抵抗器をつなぎます。
この時、波形が正常であることを確認して下さい。

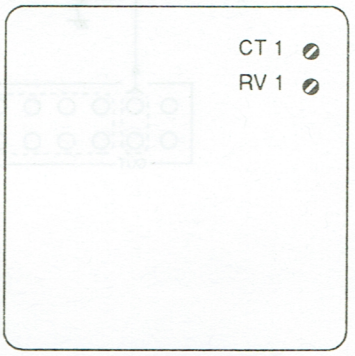
注意：　※1　SWEEP = SWEEP/MULTIBURST
　　※2　High (20MHz) = FREQ RANGE
　　※3　Composite = COMPOSITE/CONTINUOUS
　　※4　FULL = AMPL



3-1. GAIN. f 特調整

調整時の状態	規格	調整箇所
• ビデオ信号発生器のSWEEP（High Composite APL: FULL）とBVS-V1201のIN3を接続し、75Ω終端抵抗器を一方のIN3につなぎます。 • BVS-V1201のOUTコネクターとオシロスコープのCH-1を接続し、75Ω終端抵抗器をつなぎます。 • SW-354基板のスイッチ1を押します。	• 1MHz付近の出力レベルAを入力波形に対し、±7mVの範囲に調整して下さい。〈GAIN調整〉 • 12MHz付近の出力レベルBを1MHz付近（A）に対し、±22mVの範囲に調整して下さい。〈f 特調整〉 	◎ RV1/VSW-22〈GAIN調整〉 ◎ CT1/VSW-22〈f 特調整〉





VSW-22基板（部品面）

SECTION 3
ELECTRICAL ALIGNMENT

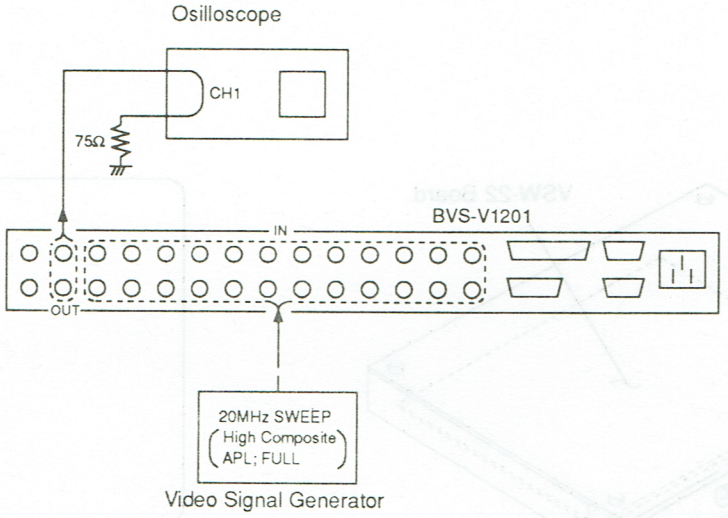
[Required Equipment]

- 75Ω Terminator
- Osilloscope : Must have 100 MHz or higher characteristic.
- Video Signal Generator: TEKTRONIX 1410 or the equivalent.

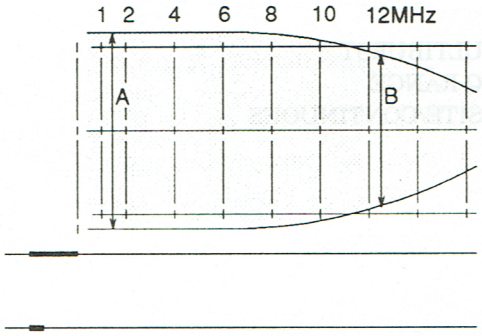
[Connection]

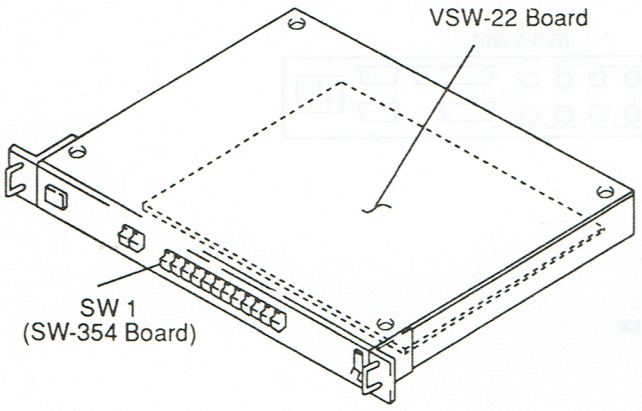
Connect the ※1 SWEEP Signal (※2 High ※3 Composite APL; ※4 FULL) of the CH-1 of the BVS-V1201.
Connect the 75Ω terminator to the Osilloscope.
Then, confirm that the waveform is correct.

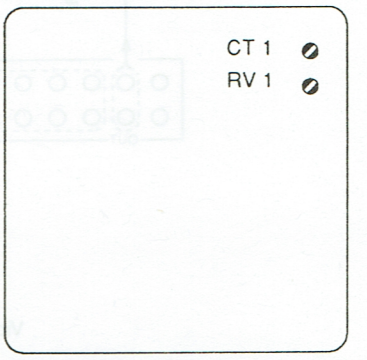
NOTE: ※1 SWEEP = SWEEP/MULTIBURST
※2 High (20MHz) = FREQ RANGE
※3 Composite = COMPOSITE/CONTINUOUS
※4 FULL = AMPL



3-1. GAIN. FREQUENCY RESPONSE ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustment
• Connect the SWEEP Signal (High Composite APL: FULL) of Video Signal Generator to the IN3 of BVS-V1201. • Connect the 75Ω terminator to the another IN3 of BVS-V1201. • Connect the CH-1 of the Osilloscope to the OUTPUT connector of BVS-V1201, and connect the 75Ω terminator. • Push the Switch 1 of the SW-354 Board.	• Adjust output level A around the 1MHz within -7 to +7mV in compared with input waveform. <GAIN adjustment> • Adjust output level B around the 12MHz within -22 to +22 mV in compared with waveform around the 1MHz. <FREQUENCY response adjustment> 	⊘ RV1/VSW-22 <GAIN adjustment> ⊘ CT1/VSW-22 <FREQUENCY response adjustment>

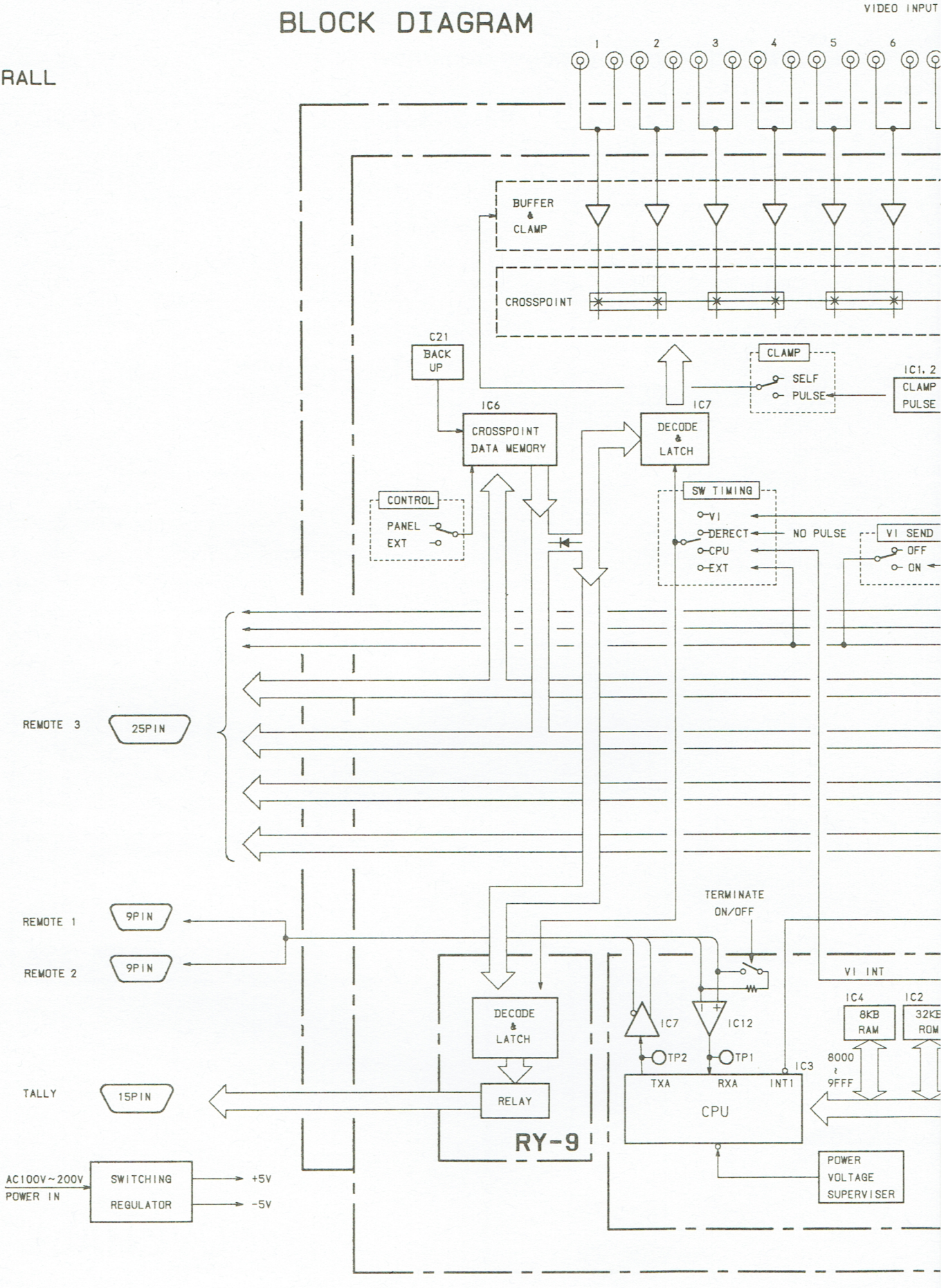


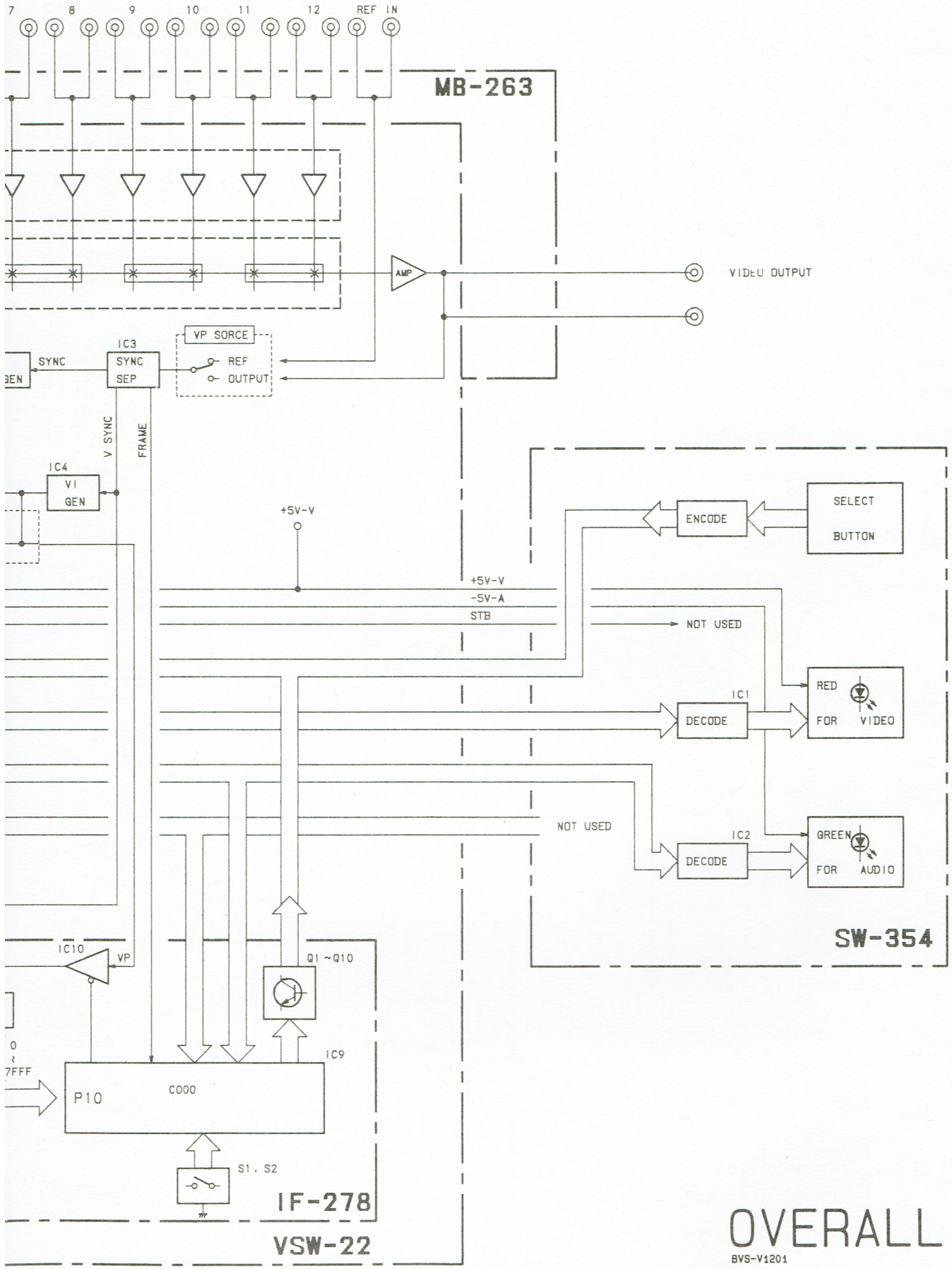


VSW-22 Board (Component Side)

SECTION 4
BLOCK DIAGRAM

OVERALL





OVERALL

BVS-V1201

SECTION 5
SEMICONDUCTOR ELECTRODES

ここに記載されているIC，トランジスタ，ダイオードは，それぞれの機能を等価的に表わしたものです。したがって互換性を表わすものではありません。（互換性のない型名が併記されている事もあります。）部品の交換をする時は，SPARE PARTSの章を参照して下さい。

ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

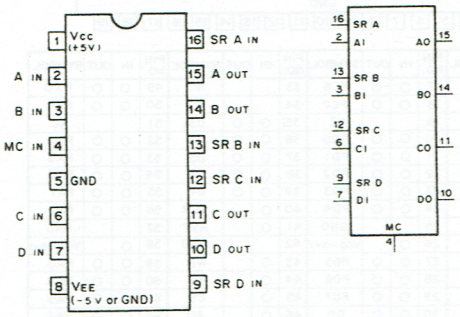
IC	PAGE
AM26LS30PC	5-1
AM26LS32PC	5-1
CXA1431P	5-7
CXA1432P	5-7
CXD1095Q	5-2
CXK5864BP-10L	5-2
HD64B180ROP	5-3
LC3564S-10	5-2
LM1881M	5-4
MBM27C256A-20CZ	5-4
MC74HC74AN	5-5
MN4514BS	5-4
PC74HC139N	5-5
SN74HC00N	5-4
SN74HC14NS	5-4
SN74HC32N	5-5
SN74HC74N	5-5
SN74HC139NS	5-5
SN74HC541N	5-5
SN74HC4514NT	5-5
SN74HC4515NT	5-5
TC40175BF	5-6
TC4023BF	5-6
TC4049BF	5-6
TC74HC123AF	5-6
TC74HC123F	5-6
TC74HC4514AP	5-5
TC74HC4515AP	5-5
TD62306P	5-6
TL7705CP-B	5-6

TRANSISTOR	PAGE
2SA1162-G	5-7
2SA812	5-7
2SC1623	5-7
2SC2785-F	5-7
2SC3545	5-7
DTC144WS	5-7
FA1F4L-L30	5-7

DIODE	PAGE
1S2835-T1	5-7
1S2837-T1	5-7
1SS119	5-7
1SS123	5-7
1SS226	5-7
TLY123	5-7

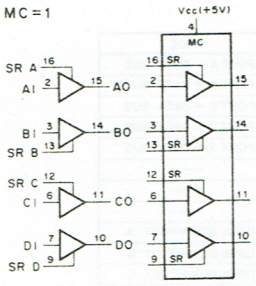
IC

AM26LS30PC (ADVANCED MICRO DEVICES)
LINE DRIVER
— TOP VIEW —



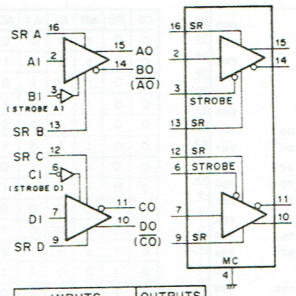
MC : MODE CONTROL
SR : SLEW RATE CONTROL

MC = 1



INPUTS		OUTPUTS
MC	A TO D	A TO D
1	0	0
1	1	1

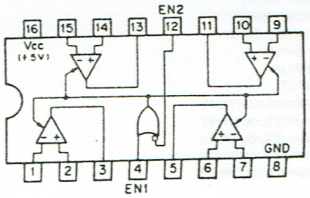
MC = 0



INPUTS			OUTPUTS	
MC	STROBE	A & D	A & D	B & C
0	0	0	0	1
0	0	1	1	0
0	1	X	HI-Z	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

AM26LS32PC (ADVANCED MICRO DEVICES)
HIGH SPEED DIFFERENTIAL LINE RECEIVER
— TOP VIEW —



FUNCTION TABLE		
EN2	EN1	OUTPUT
0	0	ENABLE
0	1	ENABLE
1	0	HI-Z
1	1	ENABLE

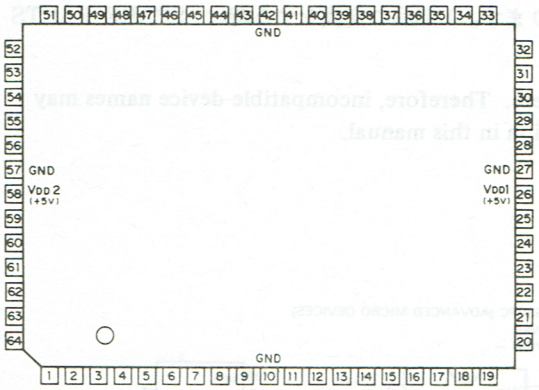
0 ; LOW LEVEL
1 ; HIGH LEVEL
HI-Z ; HIGH IMPEDANCE

	SENSE	INPUT VOLT
LS32	±200mV	±7V
LS33	±500mV	±15V

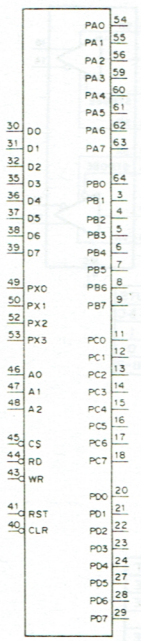
等価回路はICメーカーのData Bookに従いました。

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

CXD1095Q (SONY) FLAT PACKAGE
C-MOS I/O PORT EXPANDER
— TOP VIEW —



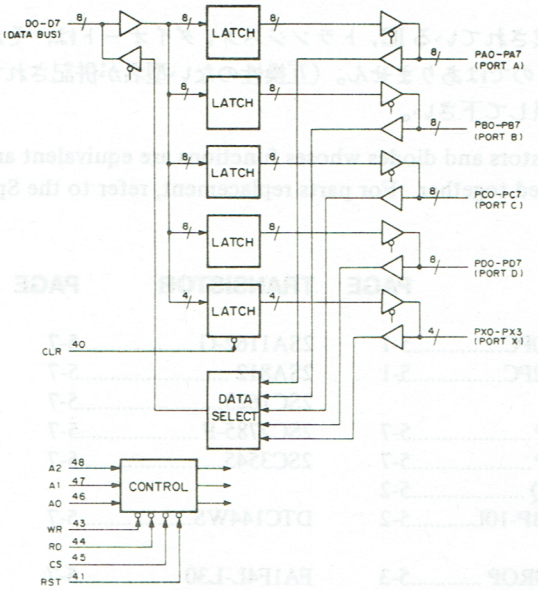
PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			NC	17	○	○	PC6	33			NC	49	○	○	PX0
2			NC	18	○	○	PC7	34			NC	50	○	○	PX1
3	○	○	PB1	19			NC	35	○	○	D3	51			NC
4	○	○	PB2	20	○	○	PD0	36	○	○	D4	52	○	○	PX2
5	○	○	PB3	21	○	○	PD1	37	○	○	D5	53	○	○	PX3
6	○	○	PB4	22	○	○	PD2	38	○	○	D6	54	○	○	PA0
7	○	○	PB5	23	○	○	PD3	39	○	○	D7	55	○	○	PA1
8	○	○	PB6	24	○	○	PD4	40	○		CLR	56	○	○	PA2
9	○	○	PB7	25			GND	41	○		RST	57			GND
10			GND	26	○		VDD (+5V)	42			GND	58	○		VDD (+5V)
11	○	○	PC0	27	○	○	PD5	43	○		WR	59	○	○	PA3
12	○	○	PC1	28	○	○	PD6	44	○		RD	60	○	○	PA4
13	○	○	PC2	29	○	○	PD7	45	○		CS	61	○	○	PA5
14	○	○	PC3	30	○	○	D0	46	○		A0	62	○	○	PA6
15	○	○	PC4	31	○	○	D1	47	○		A1	63	○	○	PA7
16	○	○	PC5	32	○	○	D2	48	○		A2	64	○	○	PB0



CS	RD	WR	A2	A1	A0	MODE
0	0	1	0	0	0	PORT A → DATA BUS
0	0	1	0	0	1	PORT B → DATA BUS
0	0	1	0	1	0	PORT C → DATA BUS
0	0	1	0	1	1	PORT D → DATA BUS
0	0	1	1	0	0	PORT X → DATA BUS
0	0	1	1	0	1	——
0	0	1	1	1	0	——
0	0	1	1	1	1	——
0	1	0	0	0	0	DATA BUS → PORT A
0	1	0	0	0	1	DATA BUS → PORT B
0	1	0	0	1	0	DATA BUS → PORT C
0	1	0	0	1	1	DATA BUS → PORT D
0	1	0	1	0	0	DATA BUS → PORT X
0	1	0	1	0	1	——
0	1	0	1	1	0	DATA BUS → CTL REG.1
0	1	0	1	1	1	DATA BUS → CTL REG.2
1	X	X	X	X	X	DATA BUS ; HI-Z

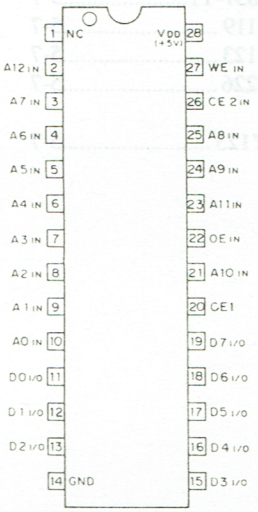
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

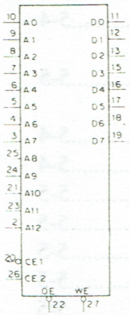
DO-D7 ; DATA BUS INPUTS/OUTPUTS
CS ; CHIP SELECT INPUT
RD ; READ STROBE INPUT
WR ; WRITE STROBE INPUT
AO-A2 ; ADDRESS INPUT
RST ; RESET INPUT
CLR ; CLEAR INPUT
PA0-PA7 ; PORT A INPUTS/OUTPUTS
PB0-PB7 ; PORT B INPUTS/OUTPUTS
PC0-PC7 ; PORT C INPUTS/OUTPUTS
PD0-PD7 ; PORT D INPUTS/OUTPUTS
PX0-PX3 ; PORT X INPUTS/OUTPUTS



CXK5864BP-10L (SONY)
LC3564S-10 (SANYO)

C-MOS 64K (8K×8 BIT) STATIC RAM
— TOP VIEW —



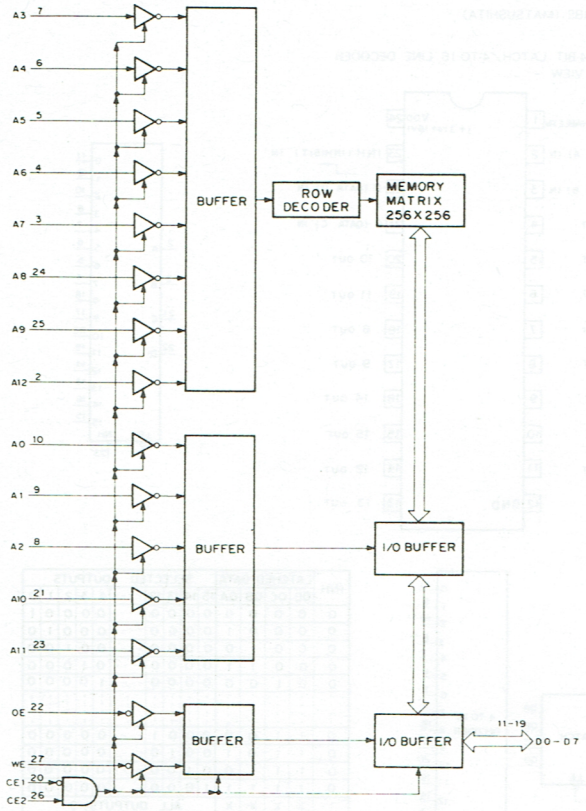


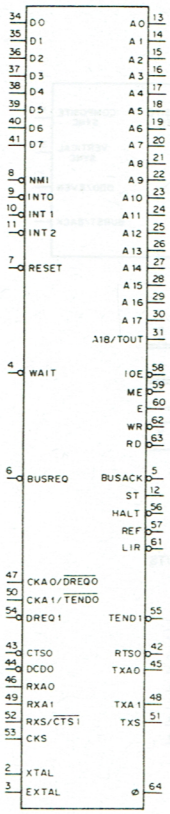
AO-A12 ; ADDRESS INPUTS
CE1, CE2 ; CHIP ENABLE 1, 2 INPUTS
DO-D7 ; DATA INPUTS/OUTPUTS
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT

MODE SELECTION

CONTROL INPUTS				MODE
CE1	CE2	OE	WE	
1	X	X	X	NO CHANGE
X	0	X	X	NO CHANGE
0	1	1	1	DISABLE OUTPUT
0	1	0	1	READ
0	1	X	0	WRITE

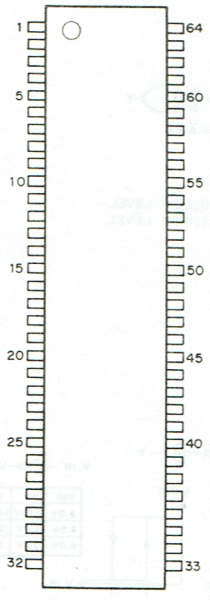
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE



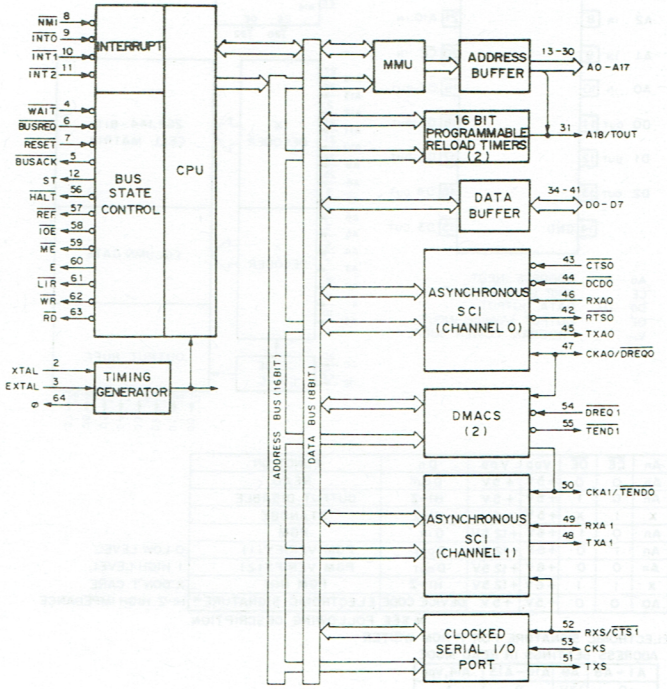


A0-A18 ; ADDRESS BUS (3-STATE)
BUSACK ; BUS ACKNOWLEDGE
BUSREQ ; BUS REQUEST
CKA0,1 ; CLOCK FOR ASYNCHRONOUS SCI CHANNEL 0,1
CKS ; CLOCK FOR SERIAL I/O PORT
CTS0,1 ; CLEAR TO SEND FOR ASYNCHRONOUS SCI CHANNEL 0,1
D0-D7 ; DATA BUS
DCD0 ; DATA CARRIER DETECT FOR ASYNCHRONOUS SCI CHANNEL 0
DREQ0,1 ; DMA REQUEST FOR CHANNEL 0,1
E ; ENABLE
EXTAL ; EXTERNAL CLOCK
INT0-2 ; INTERRUPT 0-2
IOE ; I/O ENABLE (3-STATE)
LIR ; LOAD INSTRUCTION REGISTER
ME ; MEMORY ENABLE(3-STATE)
NMI ; NON-MASKABLE INTERRUPT
RD ; READ
REF ; REFRESH
RTS0 ; REQUEST TO SEND FOR ASYNCHRONOUS SCI CHANNEL 0
RXA0,1 ; RECEIVE DATA FOR ASYNCHRONOUS SCI CHANNEL 0,1
RXS ; RECEIVE DATA FOR SERIAL I/O PORT
ST ; STATUS
TEND0,1 ; TRANSFER END FOR CHANNEL 0,1
TOUT ; TIMER OUT
TXA0,1 ; TRANSFER DATA FOR ASYNCHRONOUS SCI CHANNEL 0,1
TXS ; TRANSFER DATA FOR SERIAL I/O PORT
WR ; WRITE(3-STATE)
Φ ; SYSTEM CLOCK

HD64B180R0P (HITACHI) (6MHz)
C-MOS 8-BIT MICROPROCESSOR
— TOP VIEW —

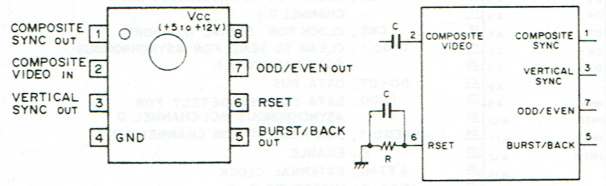


PIN NO	IN	OUT	SYMBOL	PIN NO	IN	OUT	SYMBOL
1			Vss	33			Vss
2	○		XTAL	34	○	○	D0
3	○		EXTAL	35	○	○	D1
4	○		$\overline{WAIT}$	36	○	○	D2
5		○	$\overline{BUSACK}$	37	○	○	D3
6	○		$\overline{BUSREQ}$	38	○	○	D4
7	○		$\overline{RESET}$	39	○	○	D5
8	○		$\overline{NMI}$	40	○	○	D6
9	○		$\overline{INT0}$	41	○	○	D7
10	○		$\overline{INT1}$	42		○	$\overline{RTS0}$
11	○		$\overline{INT2}$	43	○		$\overline{CTS0}$
12		○	ST	44	○		$\overline{DCD0}$
13		○	A0	45		○	TXA0
14		○	A1	46	○		RXA0
15		○	A2	47	○	○	CKA0/$\overline{DREQ0}$
16		○	A3	48		○	TXA1
17		○	A4	49	○		RXA1
18		○	A5	50	○	○	CKA1/$\overline{TEND0}$
19		○	A6	51		○	TXS
20		○	A7	52	○	○	RXS/$\overline{CTS1}$
21		○	A8	53	○	○	CKS
22		○	A9	54	○		$\overline{DREQ1}$
23		○	A10	55		○	$\overline{TEND1}$
24		○	A11	56		○	$\overline{HALT}$
25		○	A12	57		○	$\overline{REF}$
26		○	A13	58		○	$\overline{IOE}$
27		○	A14	59		○	$\overline{ME}$
28		○	A15	60		○	E
29		○	A16	61		○	$\overline{LIR}$
30		○	A17	62		○	$\overline{WR}$
31		○	A18/TOUT	63		○	$\overline{RD}$
32			VDD	64			Φ

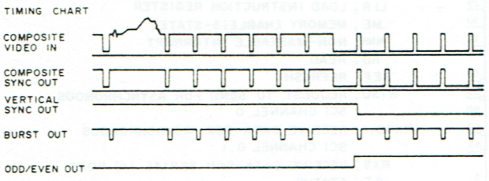


LM1881M (NS) FLAT PACKAGE

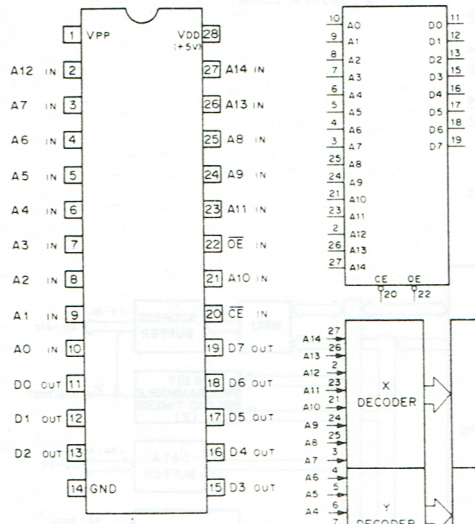
VIDEO SYNC SEPARATOR
– TOP VIEW –



TIMING CHART



MBM27C256A-20CZ (FUJITSU) (ACCESS TIME=200nS)
C-MOS 256K (32Kx8)-BIT ERASABLE PROM WITH 3-STATE OUTPUTS
– TOP VIEW –



An	$\overline{CE}$	$\overline{OE}$	Vdd	Vpp	Dn	FUNCTION
An	0	0	+5V	+5V	Dout	READ
An	0	1	+5V	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	+5V	HI-Z	STANDBY
An	0	1	+6V	+12.5V	DIN	PGM
An	1	0	+6V	+12.5V	Dout	PGM VERIFY(1)
An	0	0	+6V	+12.5V	Dout	PGM VERIFY(2)
X	1	1	+6V	+12.5V	HI-Z	PGM INH
A0	0	0	+5V	+5V	DEVICE CODE	ELECTRONIC SIGNATURE*

*SEE FOLLOWING DESCRIPTION.

O:LOW LEVEL
1:HIGH LEVEL
X:DON'T CARE
HI-Z:HIGH IMPEDANCE

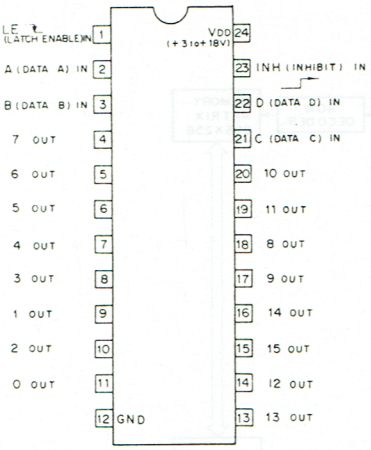
ELECTRONIC SIGNATURE FOR P ROM WRITER
ADDRESS SETTINGS IN READ MODE

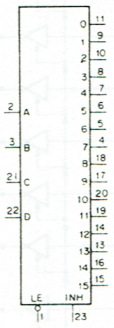
A1 – A8	A9	A10 – A13	A14,Vpp
0	12V	0	1

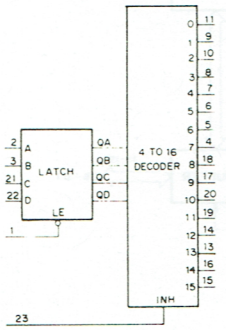
	CODE DATA								
	A0	D7	D6	D5	D4	D3	D2	D1	D0	
MAKER CODE	0	0	0	0	0	0	1	0	0	04H
DEVICE CODE	1	0	1	1	0	0	0	1	0	62H

MN4514BS (MATSUSHITA)

C-MOS 4-BIT LATCH/4-TO-16 LINE DECODER
– TOP VIEW –



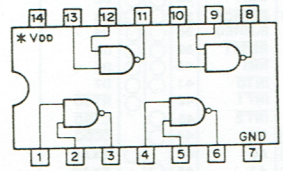


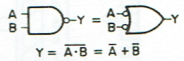


INH	LATCHED DATA				SELECTED OUTPUTS								
	QD	QC	QB	QA	15	14	13	12	----	4	3	2	1	0
0	0	0	0	0	0	0	0	0	----	0	0	0	0	1
0	0	0	0	1	0	0	0	0	----	0	0	0	1	0
0	0	0	1	0	0	0	0	0	----	0	0	1	0	0
0	0	0	1	1	0	0	0	0	----	0	1	0	0	0
0	0	1	0	0	0	0	0	0	----	1	0	0	0	0
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
0	1	1	0	0	0	0	0	1	----	0	0	0	0	0
0	1	1	0	1	0	0	1	0	----	0	0	0	0	0
0	1	1	1	0	0	1	0	0	----	0	0	0	0	0
0	1	1	1	1	1	0	0	0	----	0	0	0	0	0
1	X	X	X	X	ALL OUTPUTS=0									

SN74HC00N (TI)

C-MOS 2-INPUT NAND GATE
– TOP VIEW –





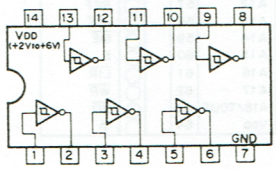
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

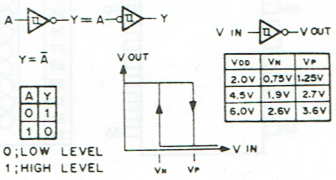
O;LOW LEVEL
1;HIGH LEVEL

*VDD AC,HC;+2 to +6V
HCT;+5V

SN74HC14NS (TI)

C-MOS SCHMITT TRIGGER INVERTER
– TOP VIEW –





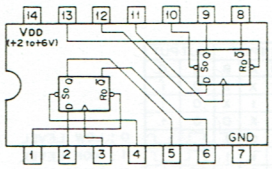
A	Y
0	1
1	0

O;LOW LEVEL
1;HIGH LEVEL

VDD	VH	VP
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

MC74HC74AN (MOTOROLA)
SN74HC74N (TI)

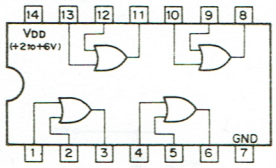
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
– TOP VIEW –

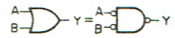


INPUTS				OUTPUTS	
SD	RD	CK	D	Qn+1	Qn+1
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Q}$n

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

SN74HC32N (TI)
C-MOS 2-INPUT OR GATE
— TOP VIEW —





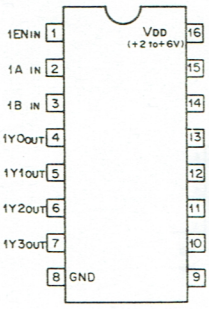
$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

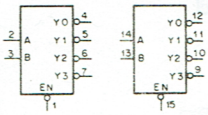
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0:LOW LEVEL
1:HIGH LEVEL

PC74HC139N (PHILIPS)
SN74HC139NS (TI)

C-MOS 1-OF-4 DECODER/DEMULTIPLEXER
– TOP VIEW –

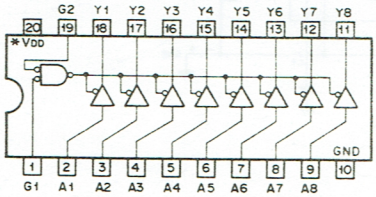




INPUTS			OUTPUTS			
EN	B	A	Y3	Y2	Y1	Y0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	X	X	1	1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

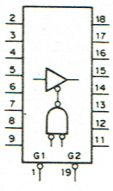
SN74HC541N (TI)
C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS
— TOP VIEW —





G1	G2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	HI-Z

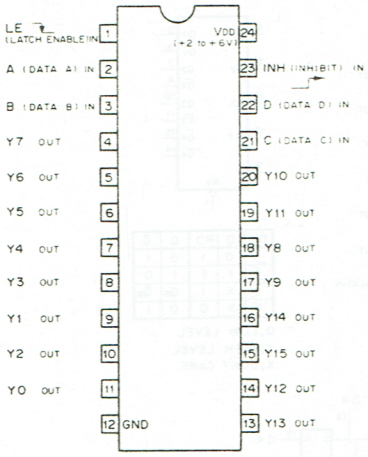
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

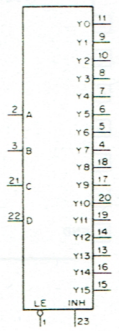


* VDD HC ; +2 to +6V
HCT ; +5V

SN74HC4514NT (TI)
TC74HC4514AP (TOSHIBA)

C-MOS 4-LINE TO 16-LINE DECODER/DEMULTIPLEXER WITH ADDRESS LATCHES
– TOP VIEW –

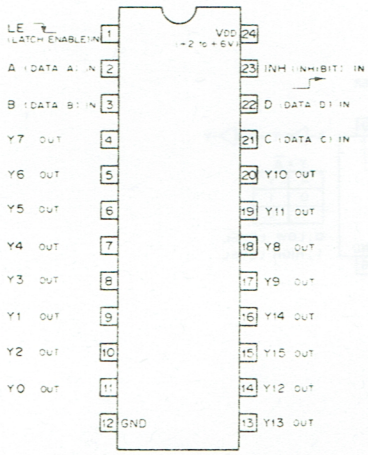


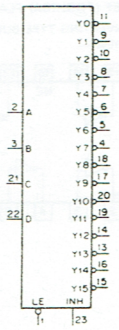


INH	LATCHED DATA				SELECTED OUTPUTS											
	D	C	B	A	Y15	Y14	Y13	Y12	-----	Y4	Y3	Y2	Y1	Y0
0	0	0	0	0	0	0	0	0	-----	0	0	0	0	1
0	0	0	0	1	0	0	0	0	-----	0	0	0	1	0
0	0	0	1	0	0	0	0	0	-----	0	0	1	0	0
0	0	0	1	1	0	0	0	0	-----	0	1	0	0	0
0	0	1	0	0	0	0	0	0	-----	1	0	0	0	0
0	1	1	0	0	0	0	0	1	-----	0	0	0	0	0
0	1	1	0	1	0	0	1	0	-----	0	0	0	0	0
0	1	1	1	0	0	1	0	0	-----	0	0	0	0	0
0	1	1	1	1	1	0	0	0	-----	0	0	0	0	0
1	X	X	X	X	ALL OUTPUTS = 0									

SN74HC4515NT (TI)
TC74HC4515AP (TOSHIBA)

C-MOS 4-LINE TO 16-LINE DECODER/DEMULTIPLEXER WITH ADDRESS LATCHES
– TOP VIEW –

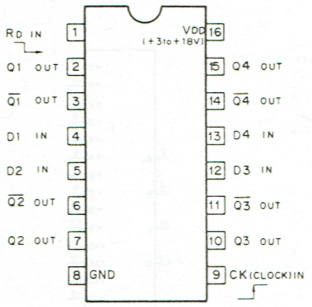


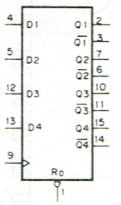


INH	LATCHED DATA				SELECTED OUTPUTS											
	D	C	B	A	Y15	Y14	Y13	Y12	-----	Y4	Y3	Y2	Y1	Y0
0	0	0	0	0	1	1	1	1	-----	1	1	1	1	0
0	0	0	0	1	1	1	1	1	-----	1	1	1	0	1
0	0	0	1	0	1	1	1	1	-----	1	1	0	1	1
0	0	0	1	1	1	1	1	1	-----	1	0	1	1	1
0	0	1	0	0	1	1	1	1	-----	0	1	1	1	1
0	1	1	0	0	1	1	1	0	-----	1	1	1	1	1
0	1	1	0	1	1	1	0	1	-----	1	1	1	1	1
0	1	1	1	0	1	0	1	1	-----	1	1	1	1	1
0	1	1	1	1	0	1	1	1	-----	1	1	1	1	1
1	X	X	X	X	ALL OUTPUTS = 0									

TC40175BF (TOSHIBA) FLAT PACKAGE

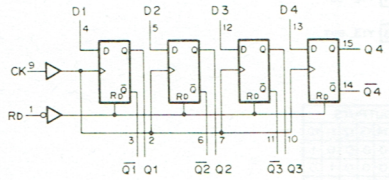
C-MOS D-TYPE FLIP-FLOP
— TOP VIEW —





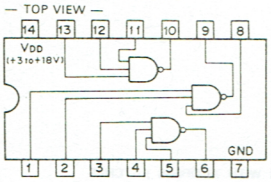
CK	D	RD	Q	$\overline{Q}$
↑	0	1	0	1
↑	1	1	1	0
↓	X	1	Q_0	$\overline{Q}_0$
X	X	0	0	1

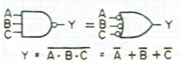
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE



TC4023BF (TOSHIBA) FLAT PACKAGE

C-MOS 3-INPUT NAND GATE
— TOP VIEW —



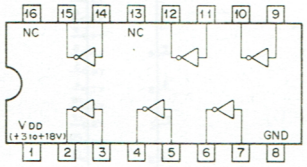


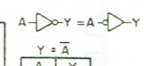
A	B	C	Y
X	X	0	1
X	0	X	1
0	X	X	1
1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

TC4049BF (TOSHIBA) FLAT PACKAGE

C-MOS INVERTING TYPE BUFFER/CONVERTER
— TOP VIEW —



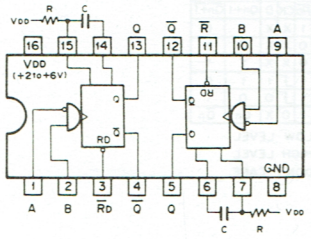


A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC74HC123AF (TOSHIBA) FLAT PACKAGE
TC74HC123F (TOSHIBA) FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
– TOP VIEW –



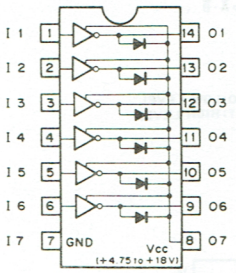
INPUT			OUTPUT	
$\overline{RD}$	A	B	Q	$\overline{Q}$
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↓	0	1	⊓	⊔

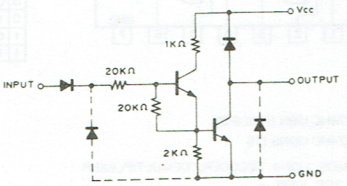
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR

TD62306P (TOSHIBA)

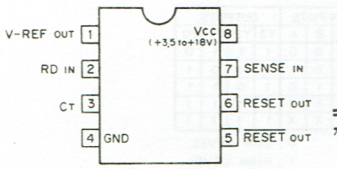
LOW SATURATION DRIVER
– TOP VIEW –

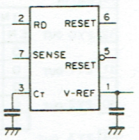


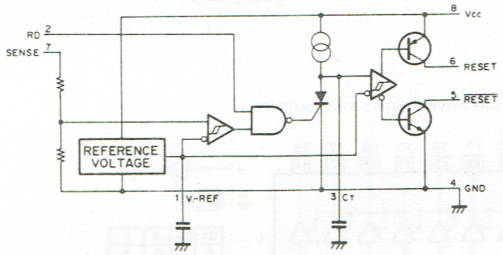


TL7705CP-B (TI)

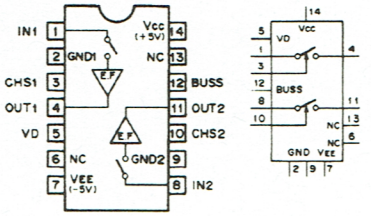
POWER VOLTAGE SUPERVISOR
— TOP VIEW —



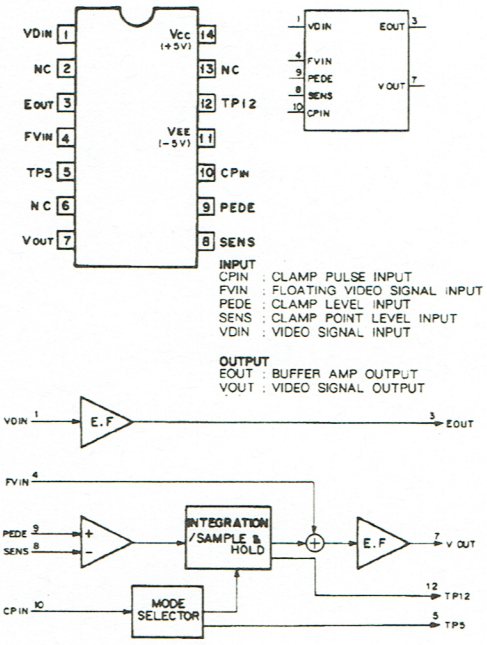




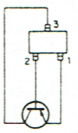
CXA1431P
VIDEO SWITCH
–TOP VIEW–



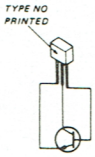
CXA1432P
VIDEO SIGNAL CLAMPER
–TOP VIEW–



TRANSISTOR

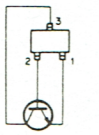


2SA812
2SA1162

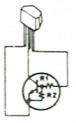


TYPE NO PRINTED

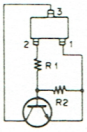
2SC2785F



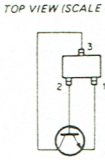
2SC3545



DTC144WS (R1=47K, R2=22K)



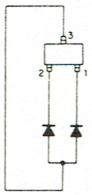
FA1F4L-L30 (R1 = 47K, R2 = 22K)



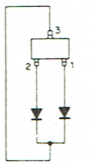
TOP VIEW (SCALE 4/1)

2SC1623

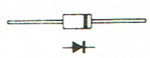
DIODE



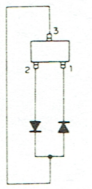
1S2835-T1



1S2837-T1



1SS119



1SS123
1SS226



TLY123 : YELLOW

SECTION 6
SCHEMATIC DIAGRAMS

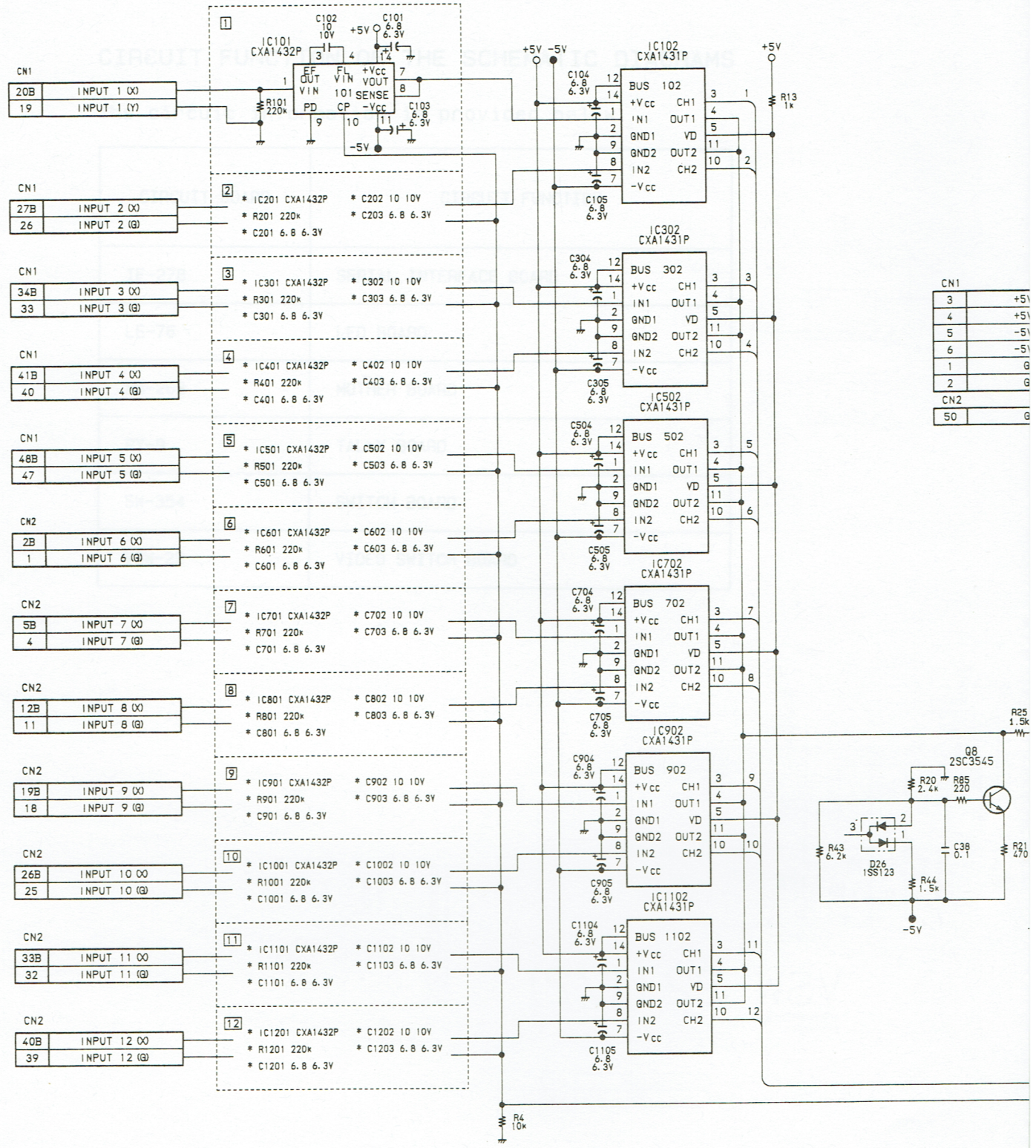
CIRCUIT FUNCTION OF THE SCHEMATIC DIAGRAMS

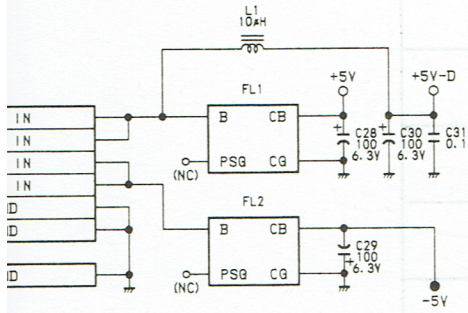
The circuit information is provided below.

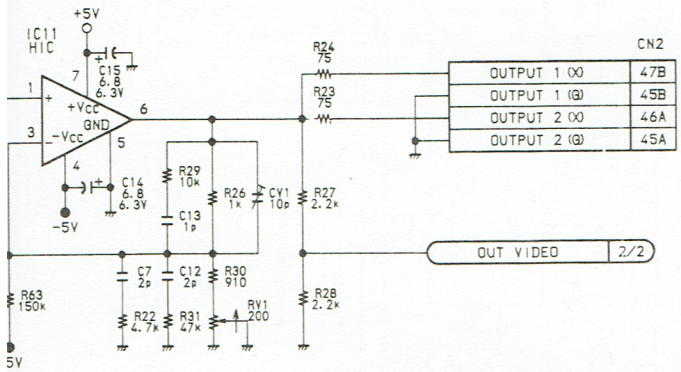
CIRCUIT BOARD	CIRCUIT FUNCTION
IF-278	SERIAL INTERFACE BOARD
LE-76	LED BOARD
MB-263	MOTHER BOARD
RY-9	TALLY BOARD
SW-354	SWITCH BOARD
VSW-22	VIDEO SWITCH BOARD

VSW-22 (1/2) ; VIDEO SWITCH BOARD

S/N 10001 TO 10020







* A1
* A4
* A5
* A6
* A7
* A8
* A9
* A10
* A11
* A12
* A13
* A14
* A15
* A16
* A17
* A19

* Z1
* Z2
* Z3
* Z4
* Z5

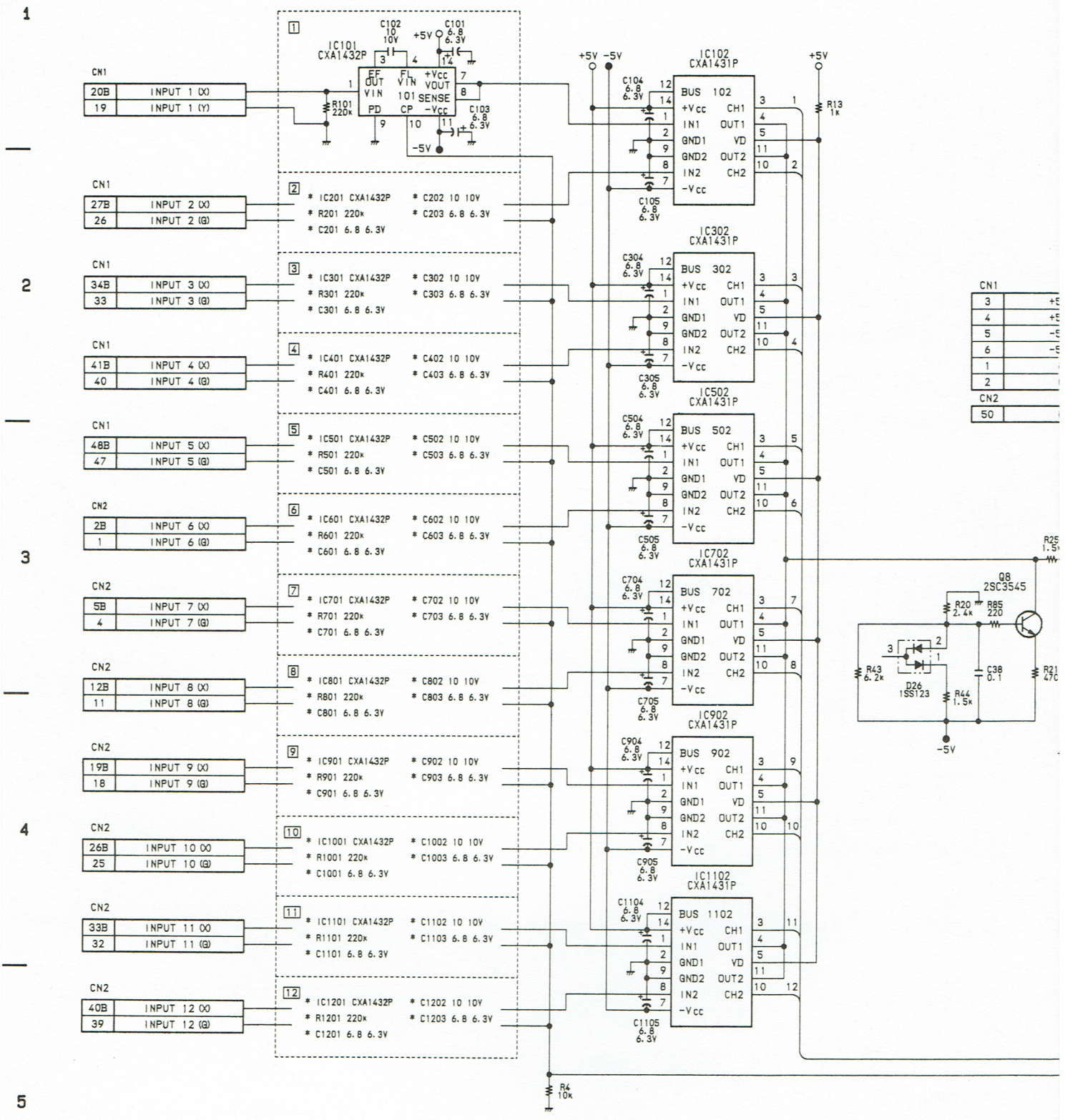
VSW-22 (1/2)

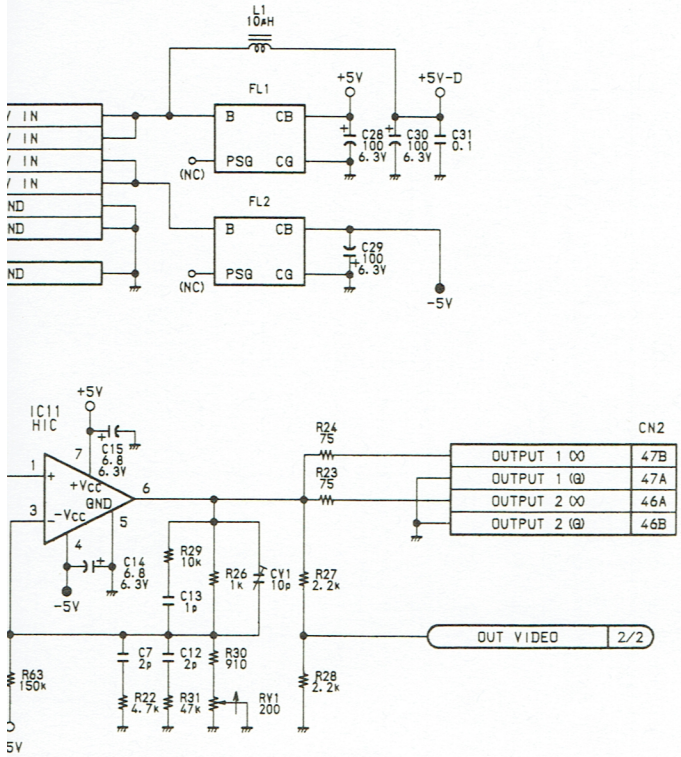
1-630-045-11 (1)
BVS-V1201



VSW-22 (1/2) ; VIDEO SWITCH BOARD

S/N 10021 AND HIGHER





● CV1, HIGH FREQ. RESPONSE

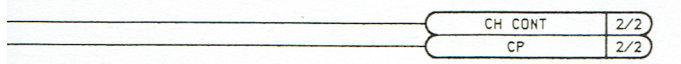
● RV1, OUTPUT LEVEL

* A1 * A4 * A5 * A6 * A7 * A8 * A9 * A10 * A11 * A12 * A13 * A14 * A15 * A16 * A17 * A19

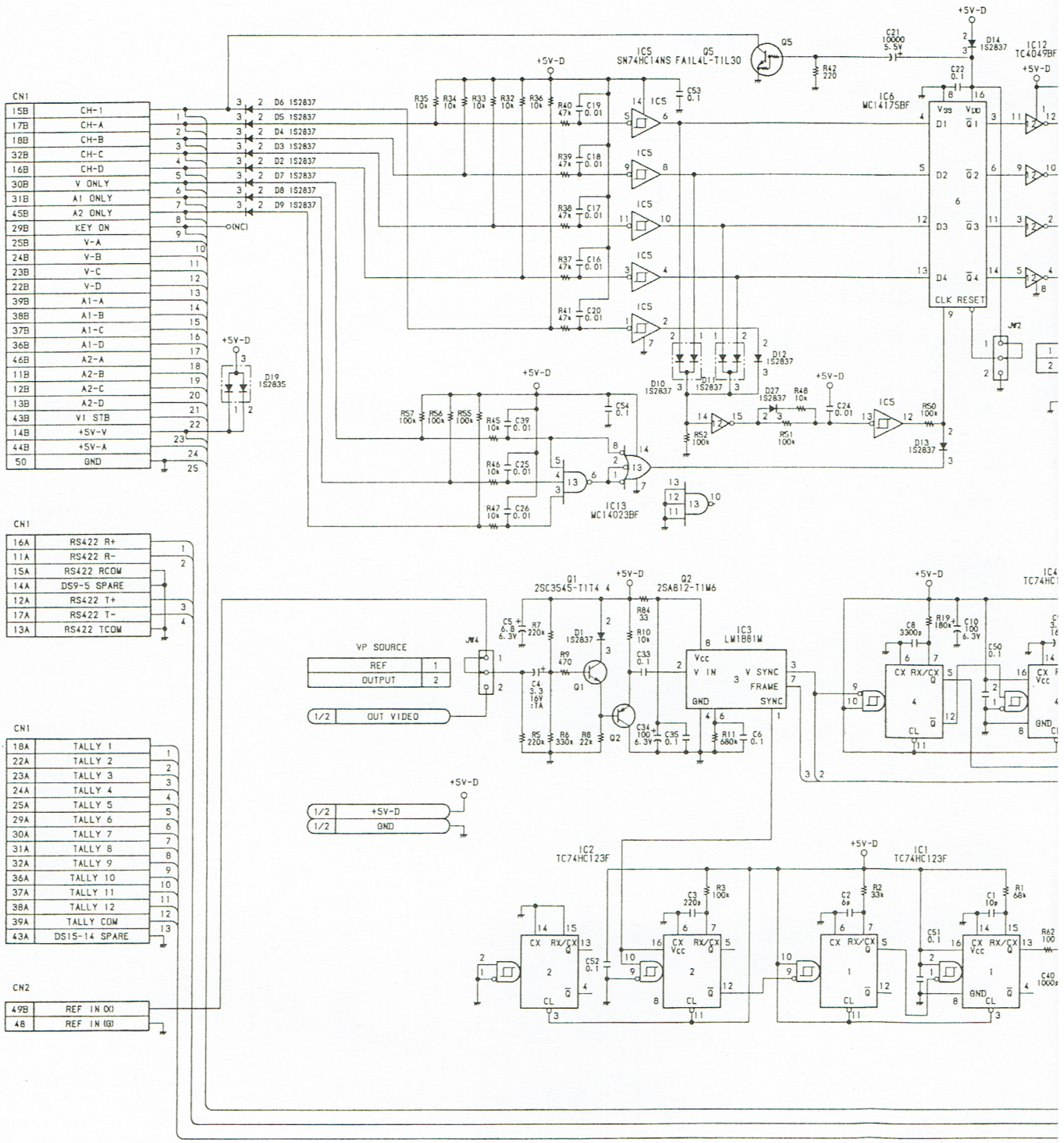
* Z1 * Z2 * Z3 * Z4 * Z5

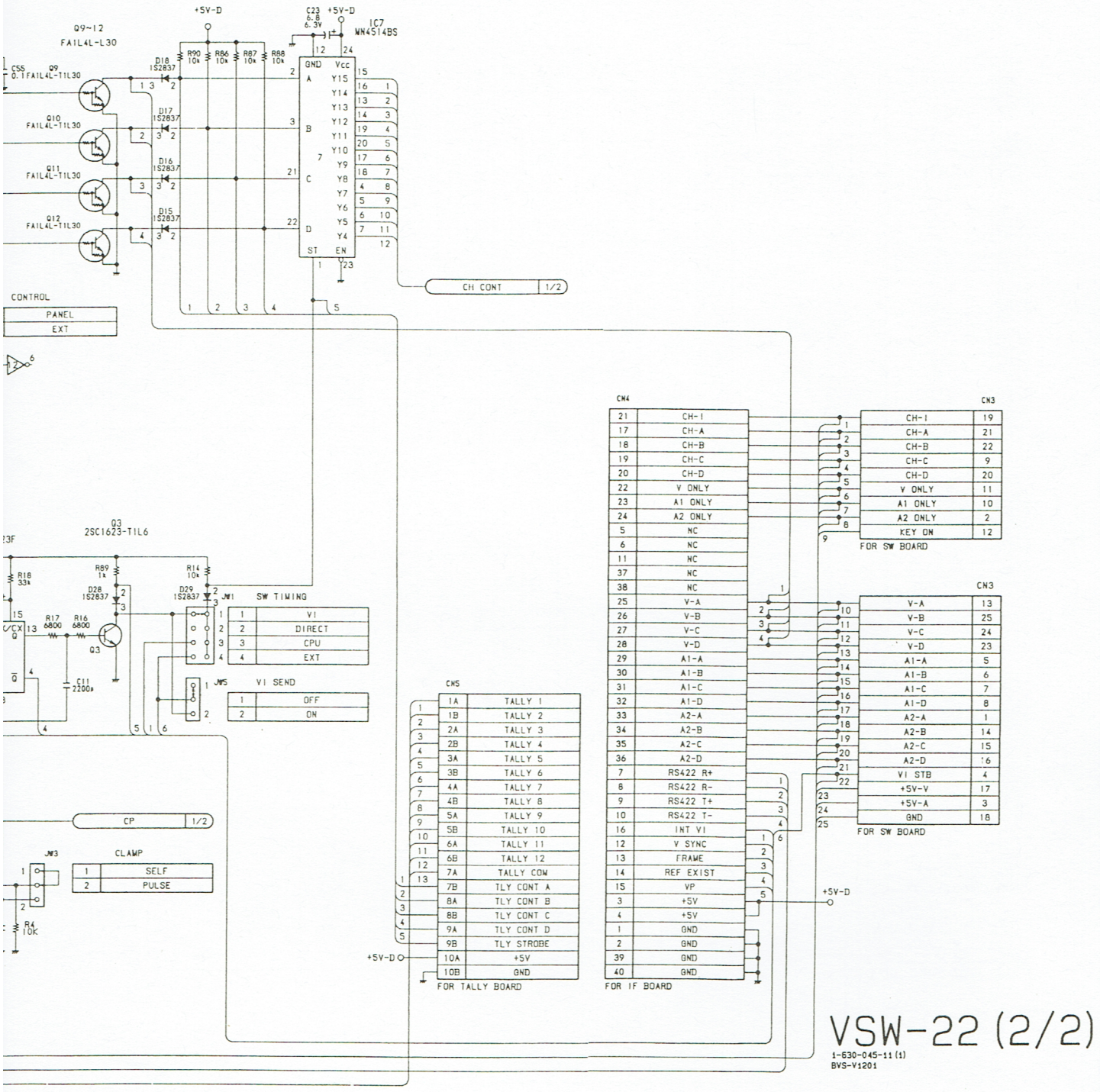
VSW-22 (1/2)

1-630-045-12 (1)
BVS-V1201



VSW-22 (2/2) ; VIDEO SWITCH BOARD S/N 10001 TO 10020

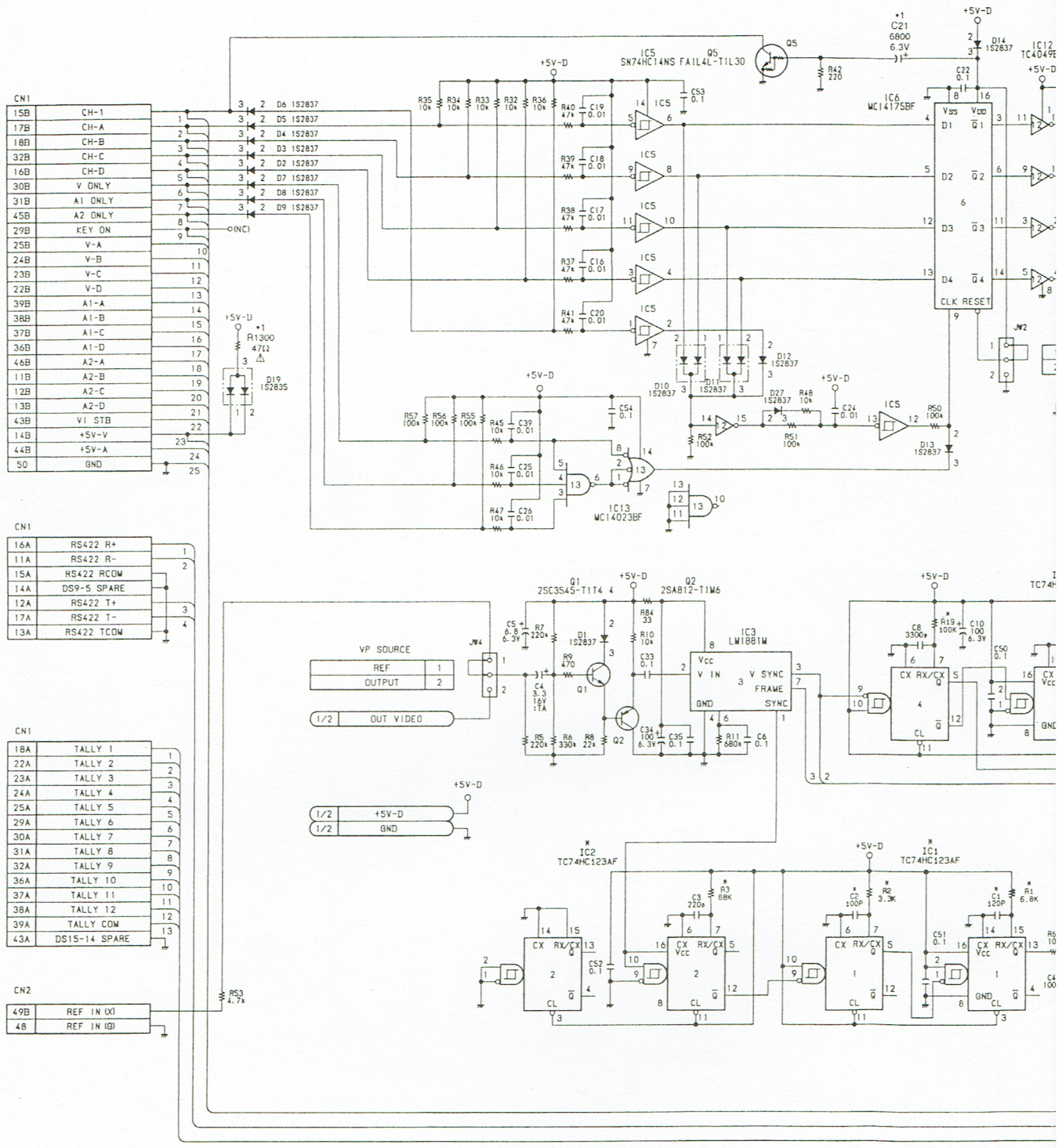


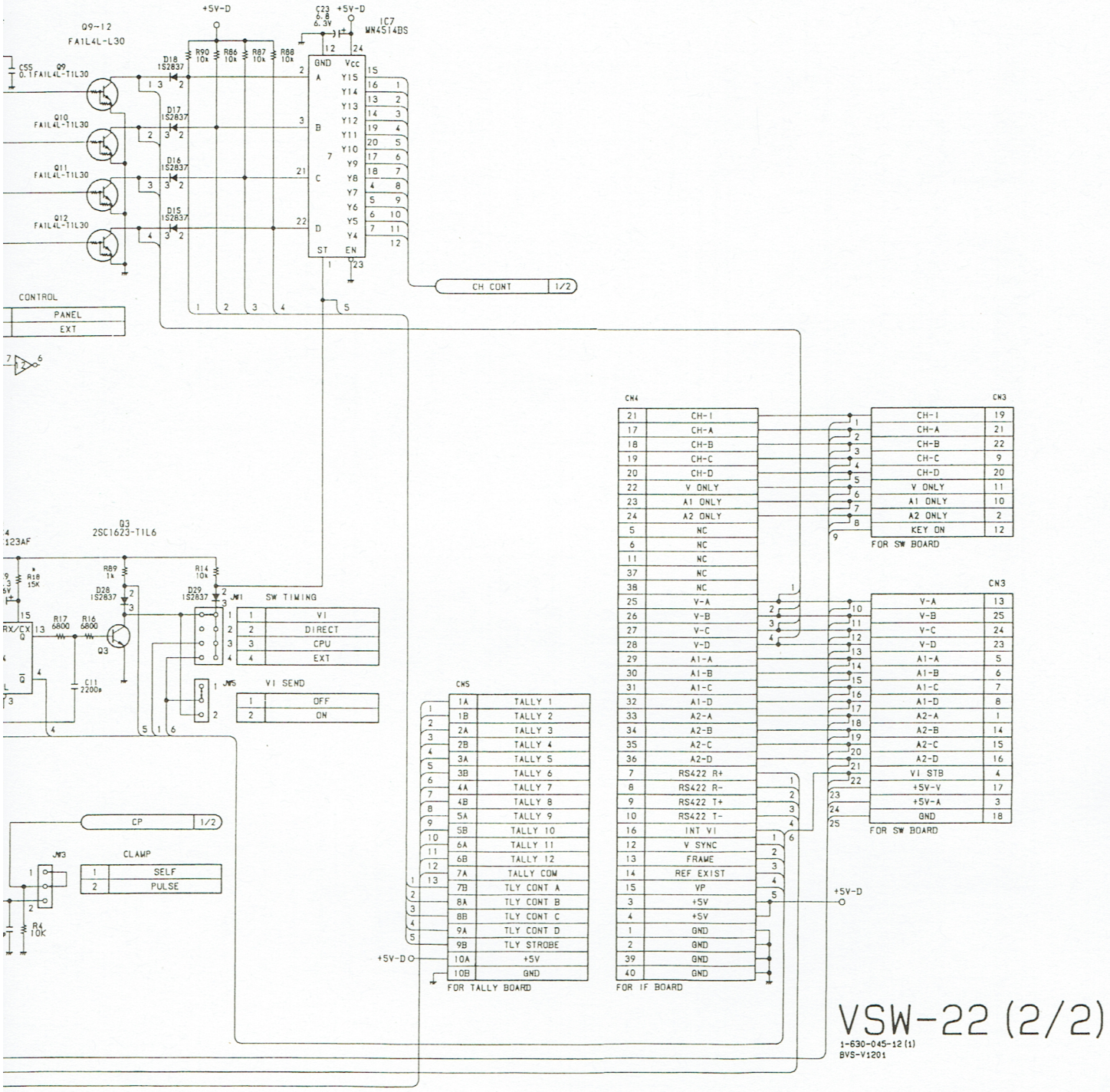


VSW-22 (2/2)

1-630-045-11 (1)
BVS-V1201

VSW-22 (2/2) ; VIDEO SWITCH BOARD S/N 10021 AND HIGHER

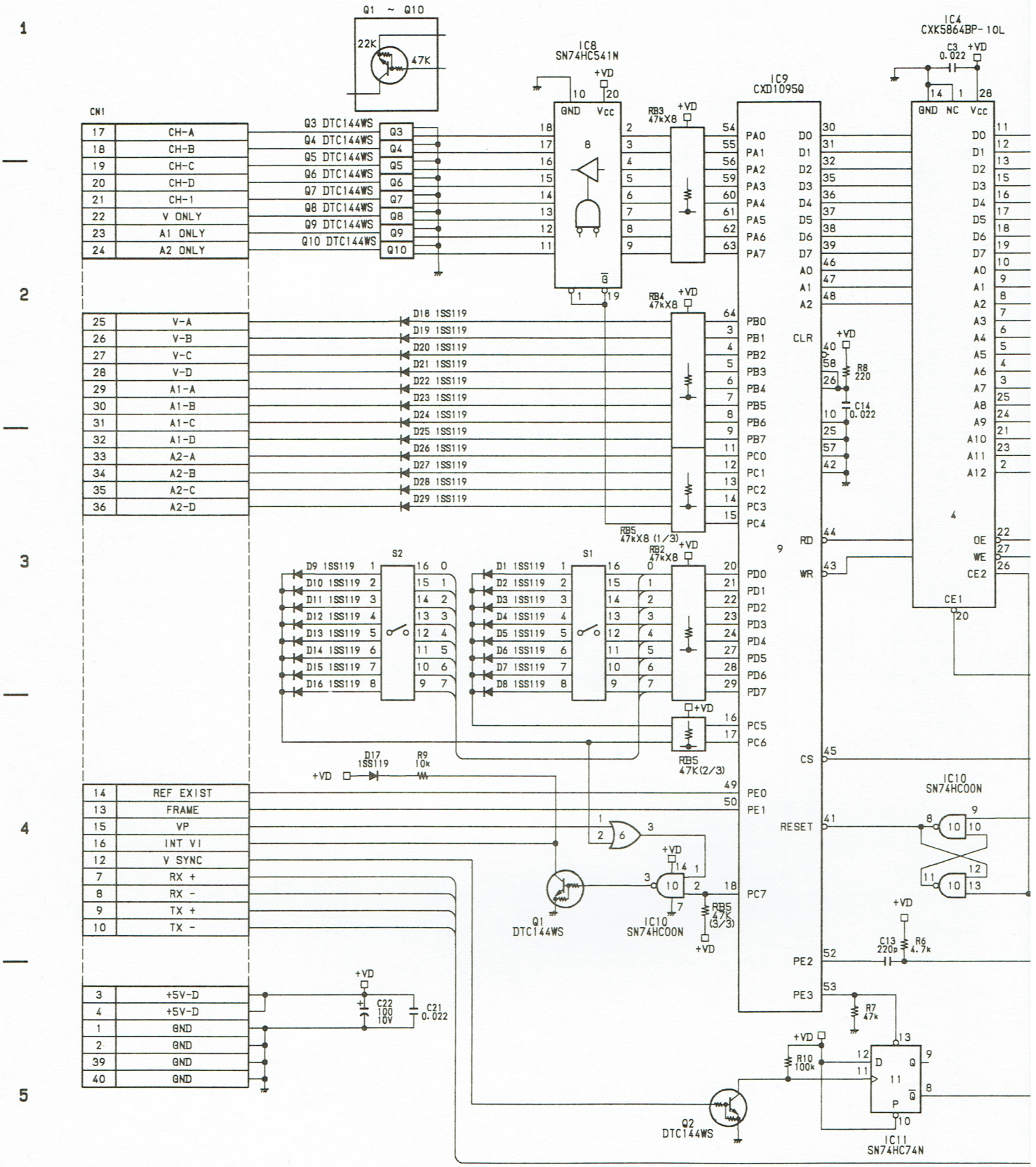




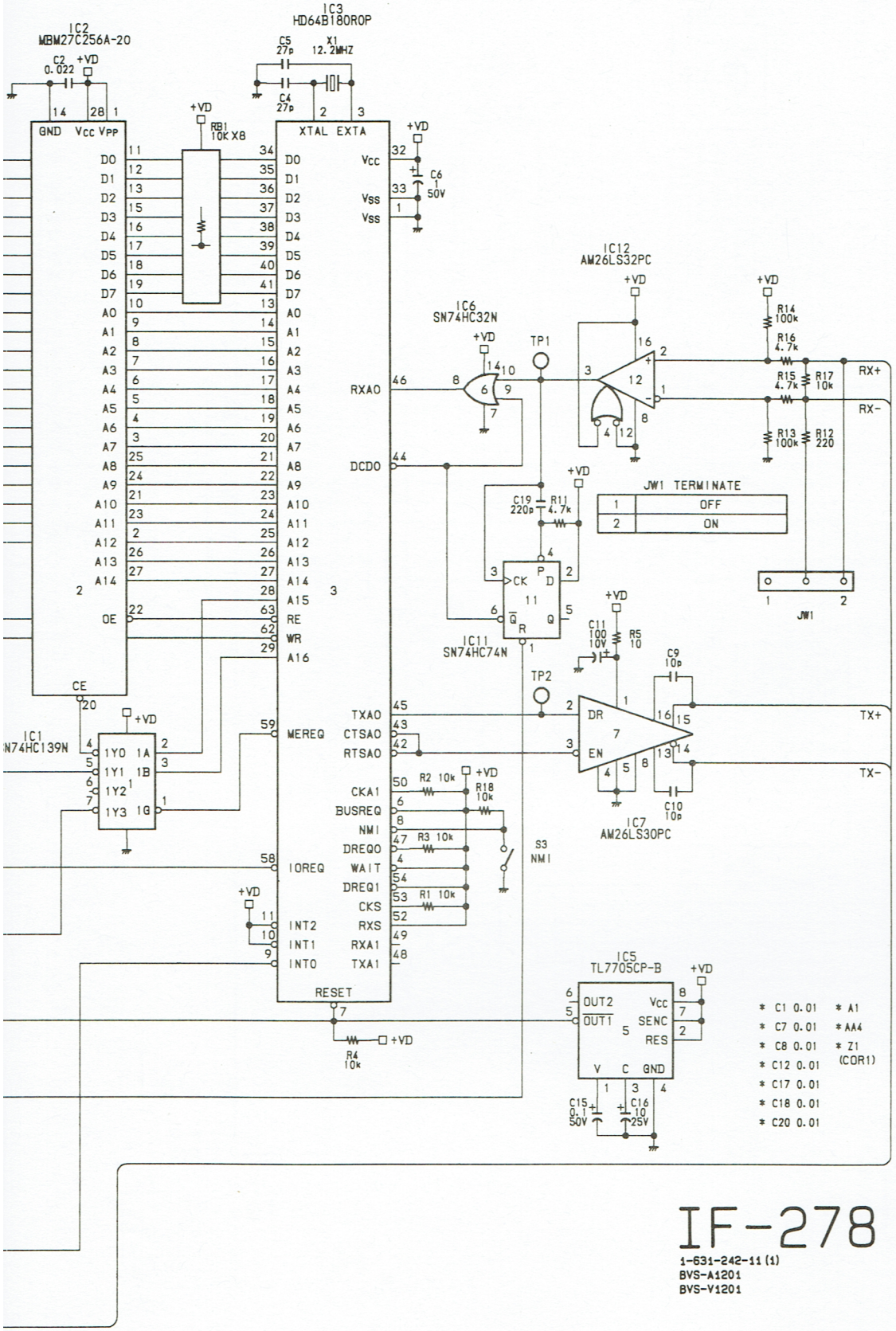
VSW-22 (2/2)

1-630-045-12 (1)
BVS-V1201

IF-278; SERIAL INTERFACE BOARD S/N 10001 TO 10020



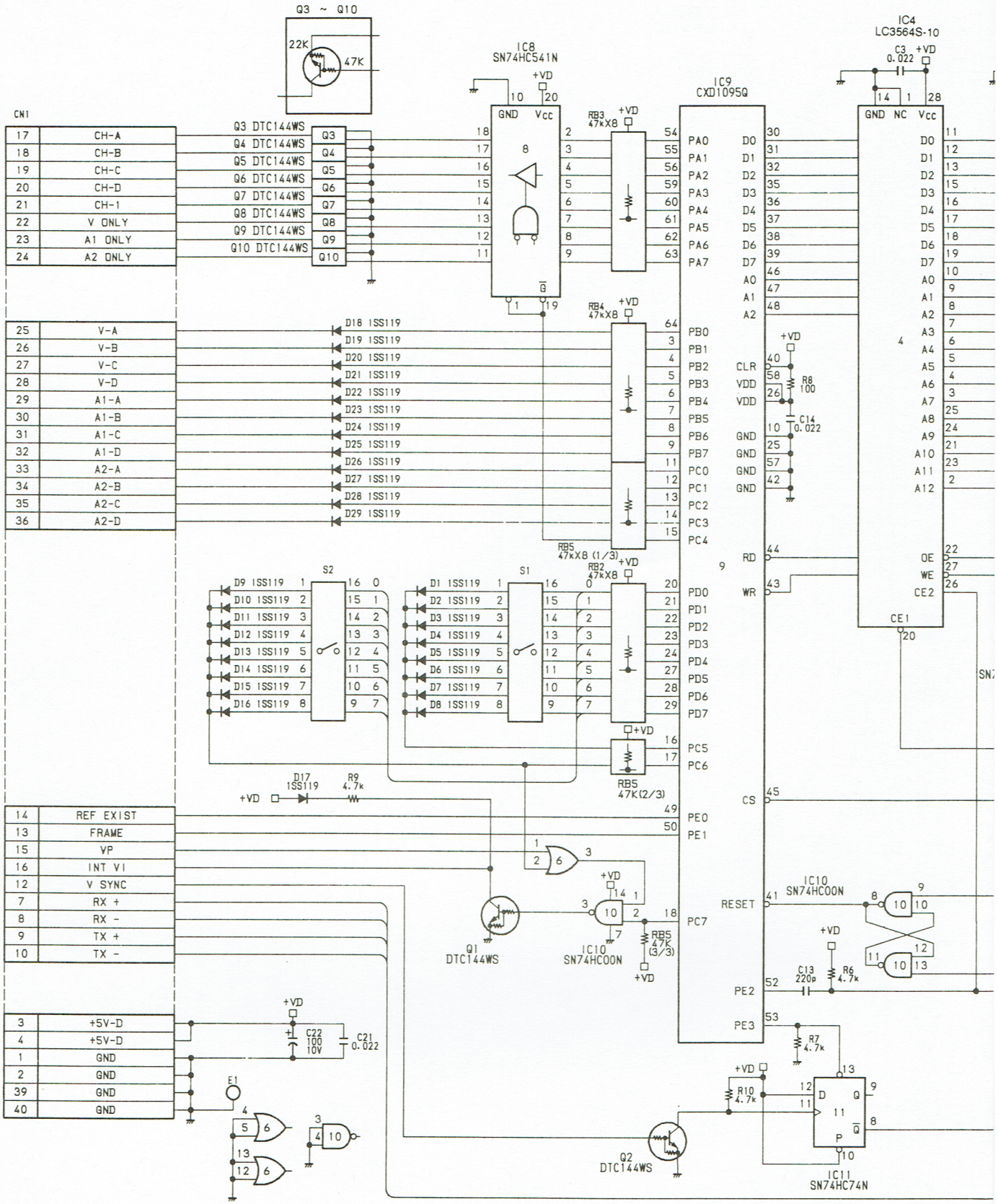
A | B | C | D

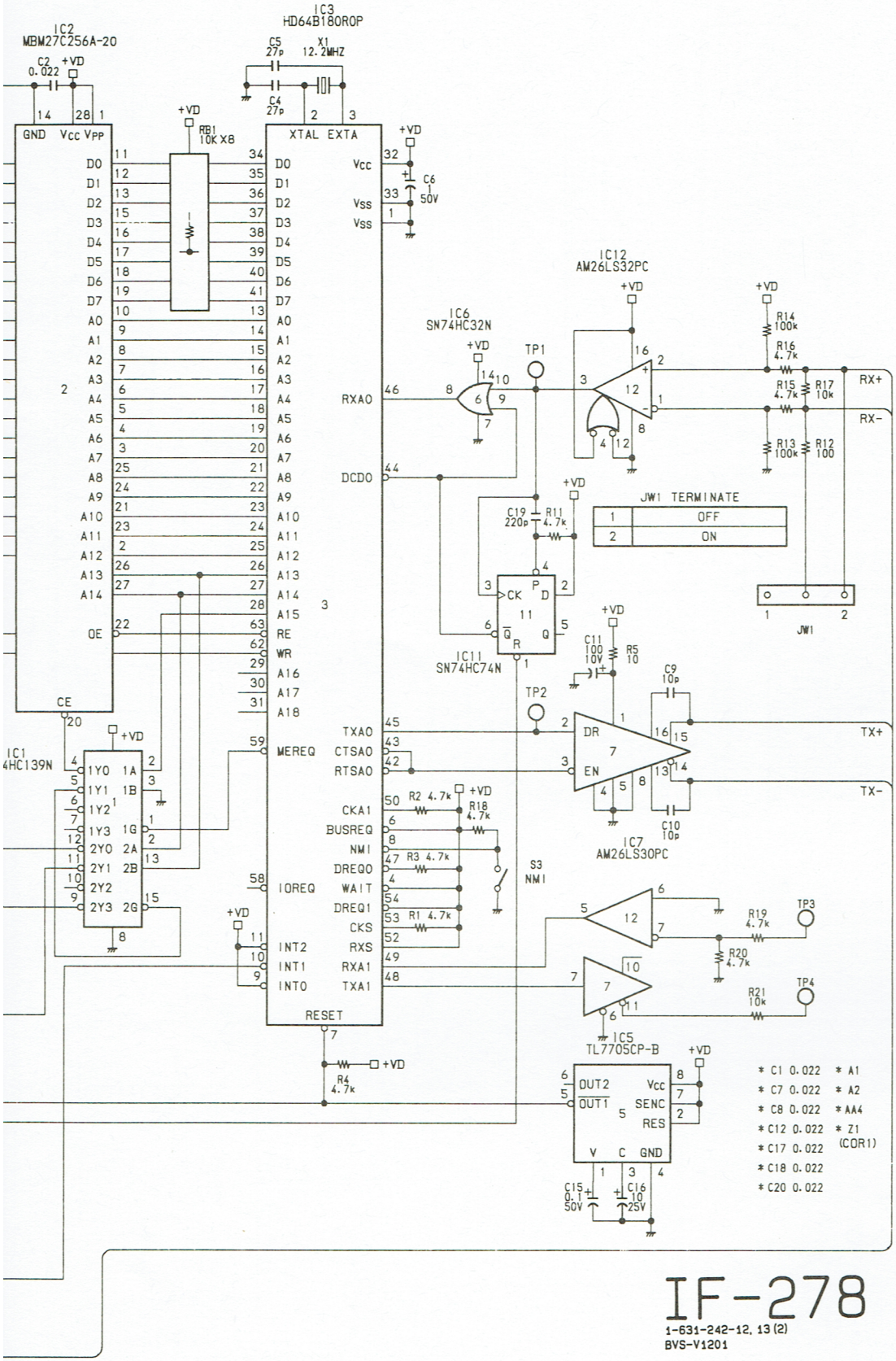


IF-278

1-631-242-11 (1)
BVS-A1201
BVS-V1201

IF-278; SERIAL INTERFACE BOARD S/N 10021 AND HIGHER

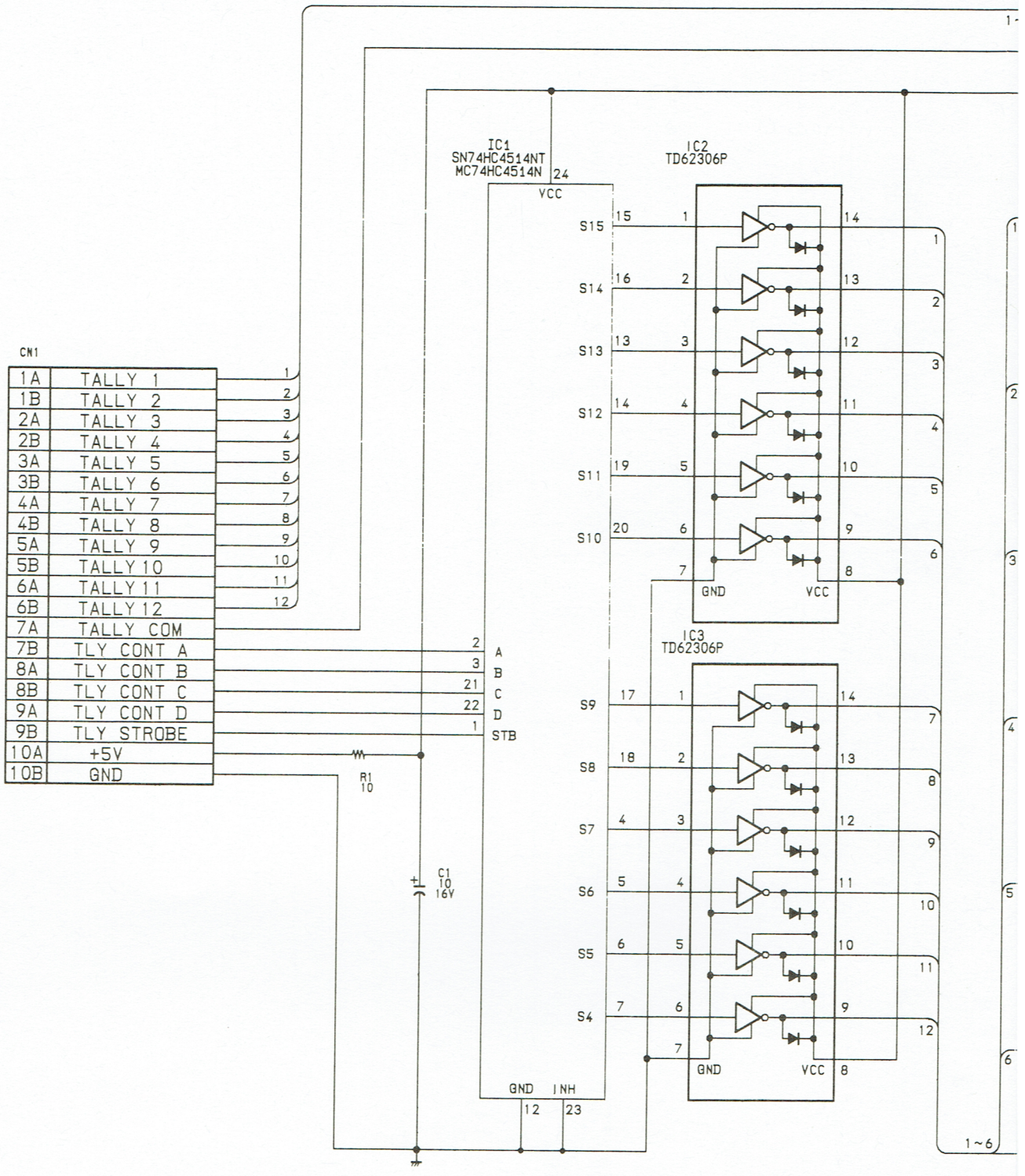


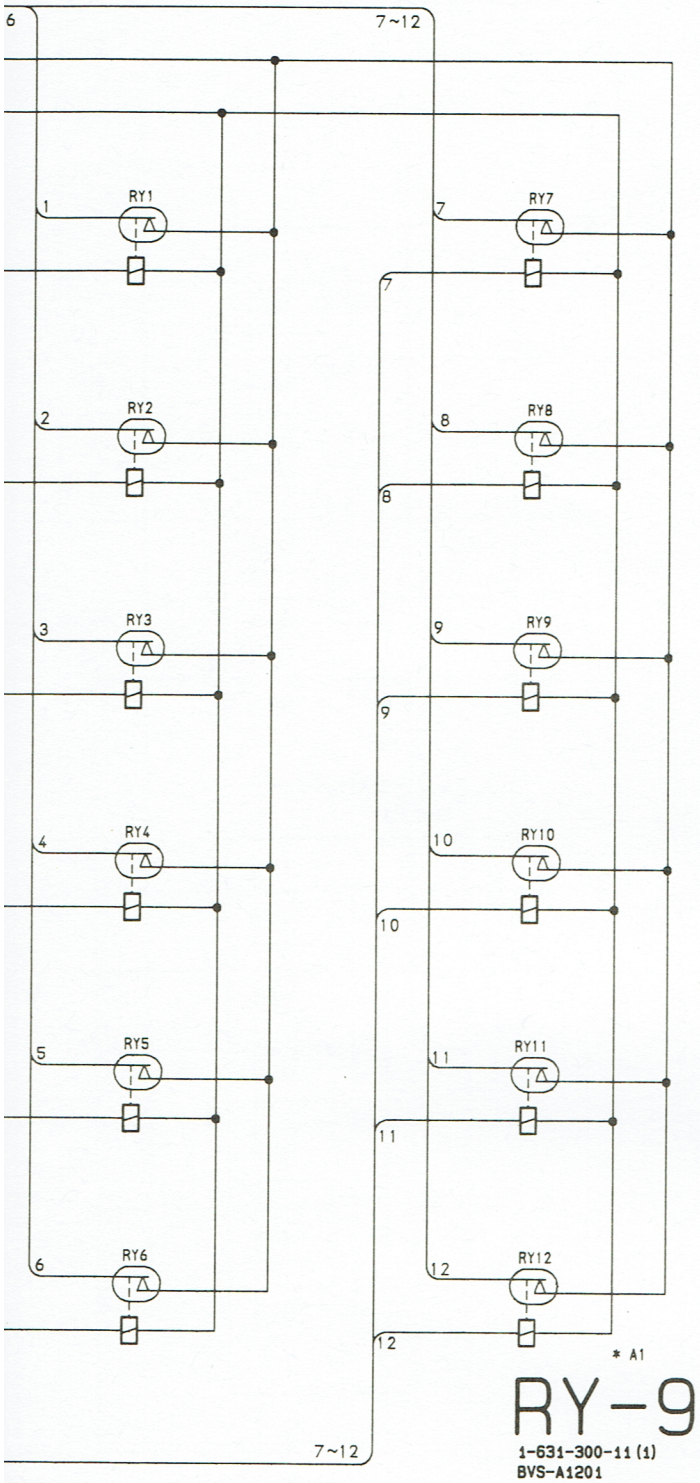


IF-278

1-631-242-12, 13 (2)
BVS-V1201

RY-9; TALLY BOARD



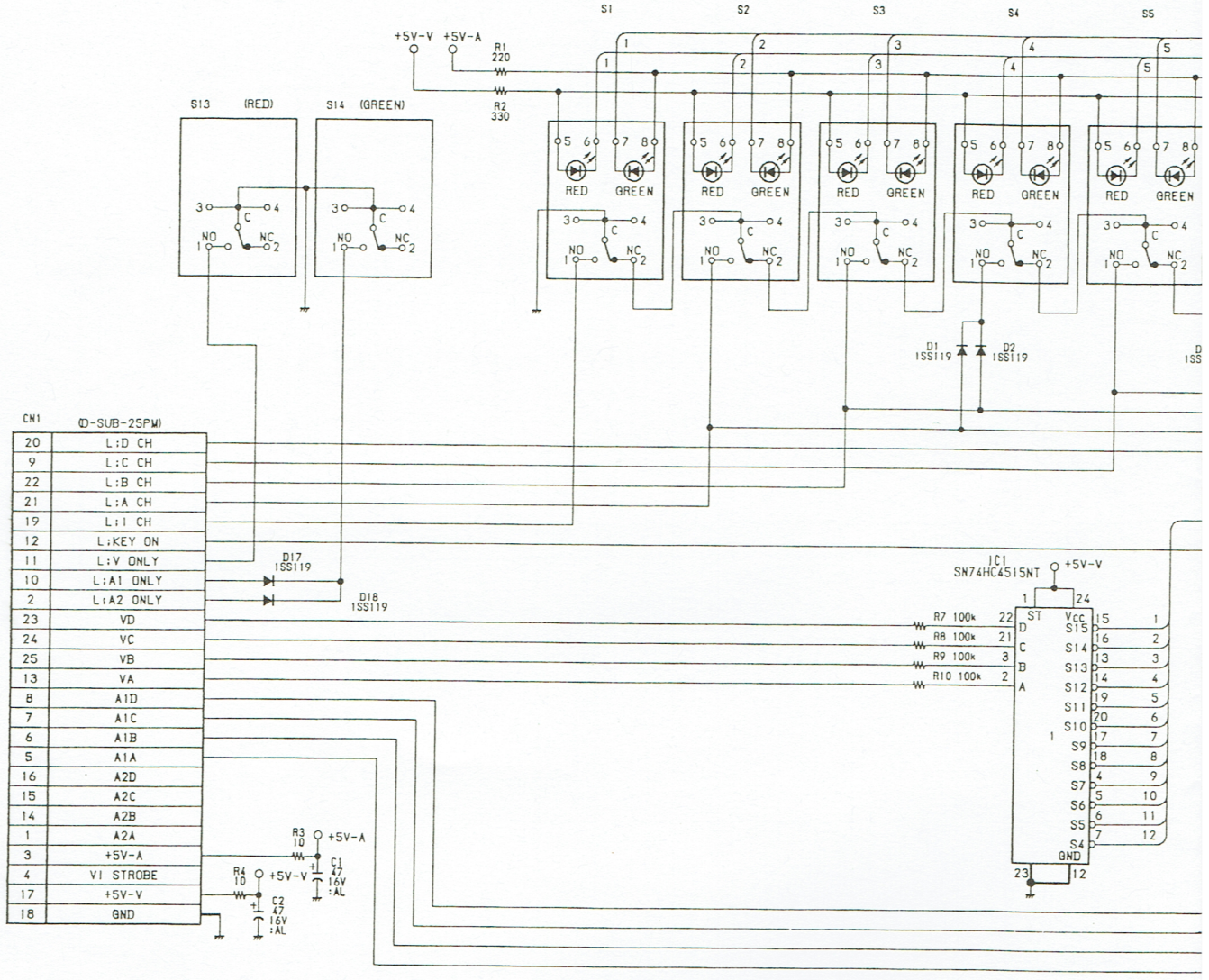


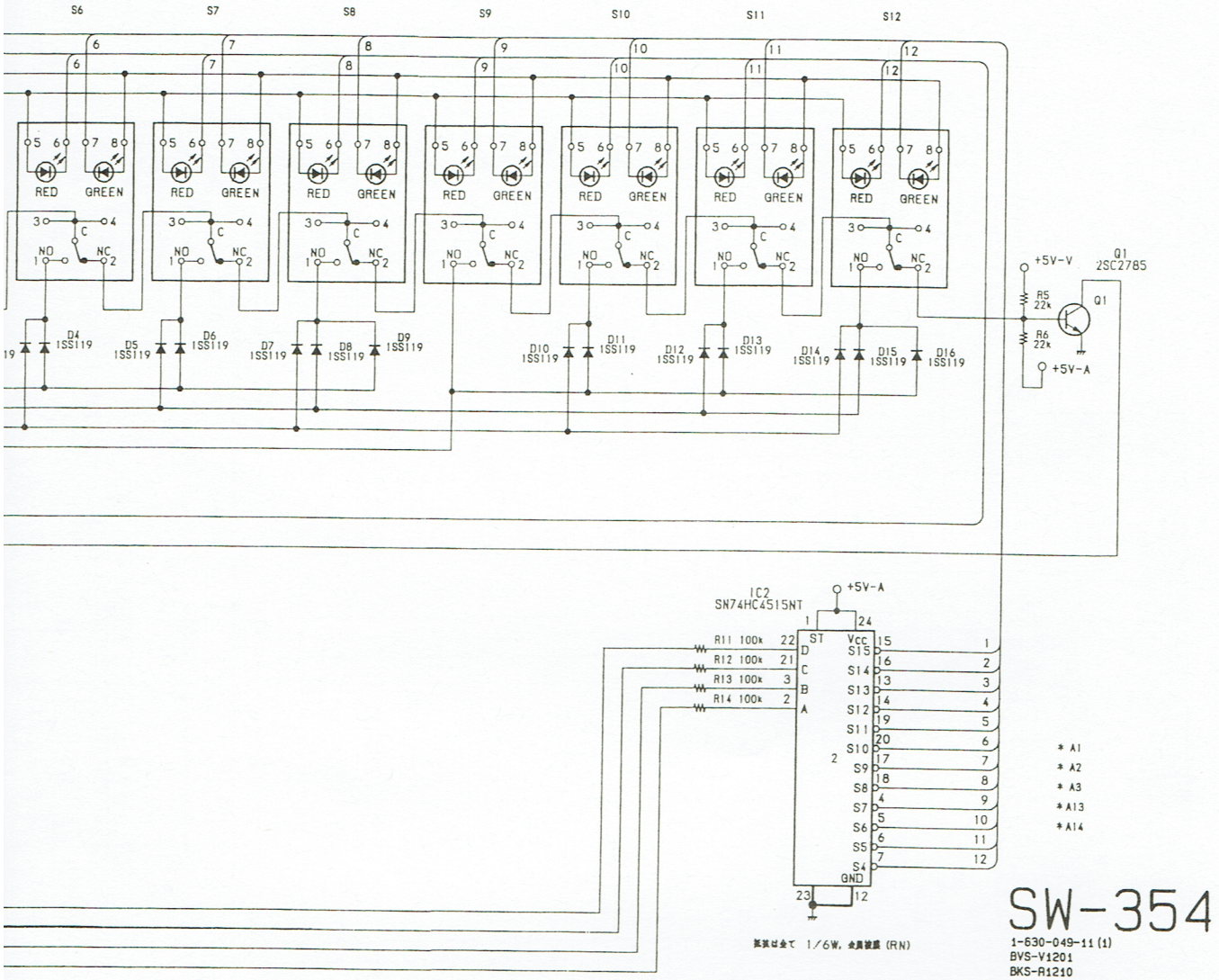
RY-9

1-631-300-11 (1)
BVS-A1201
BVS-V1201

E F G H

SW-354 ; SWITCH BOARD



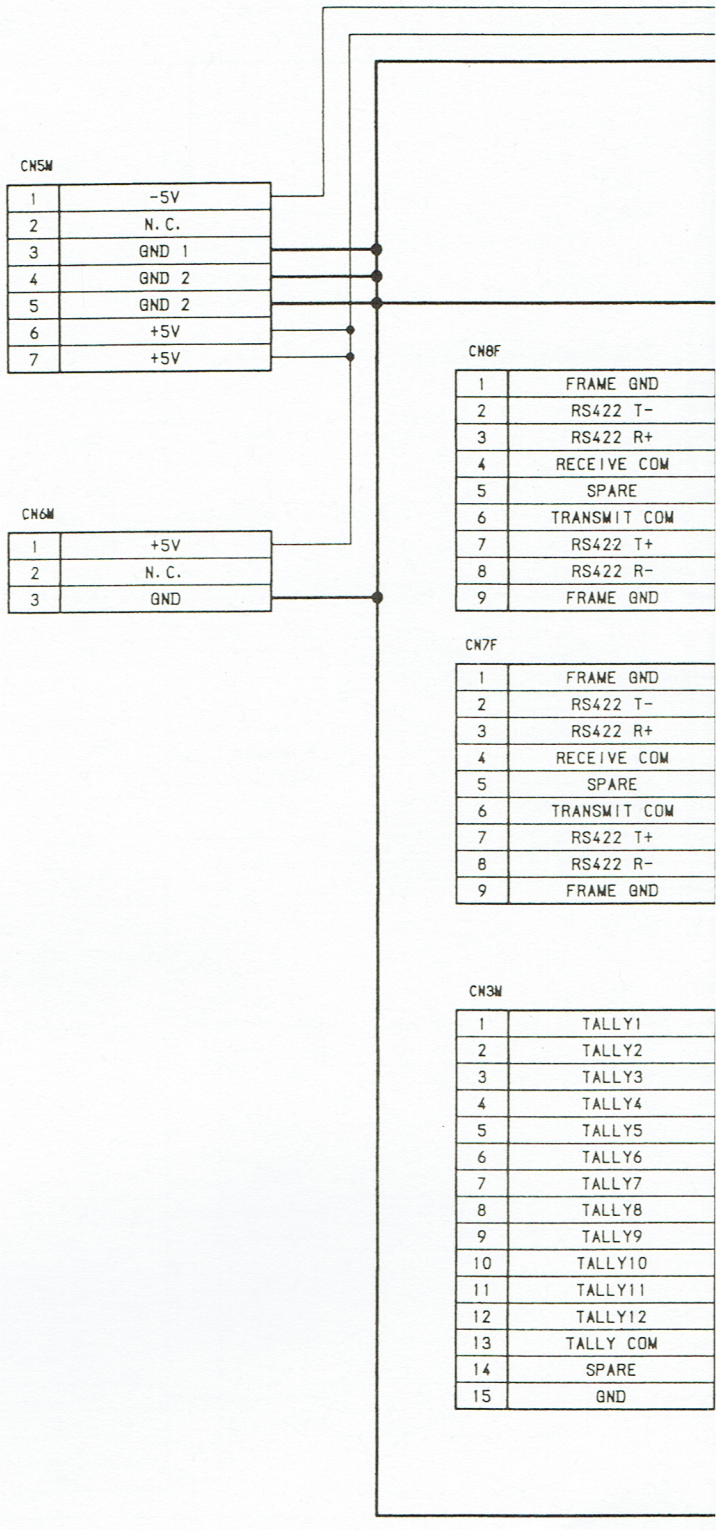


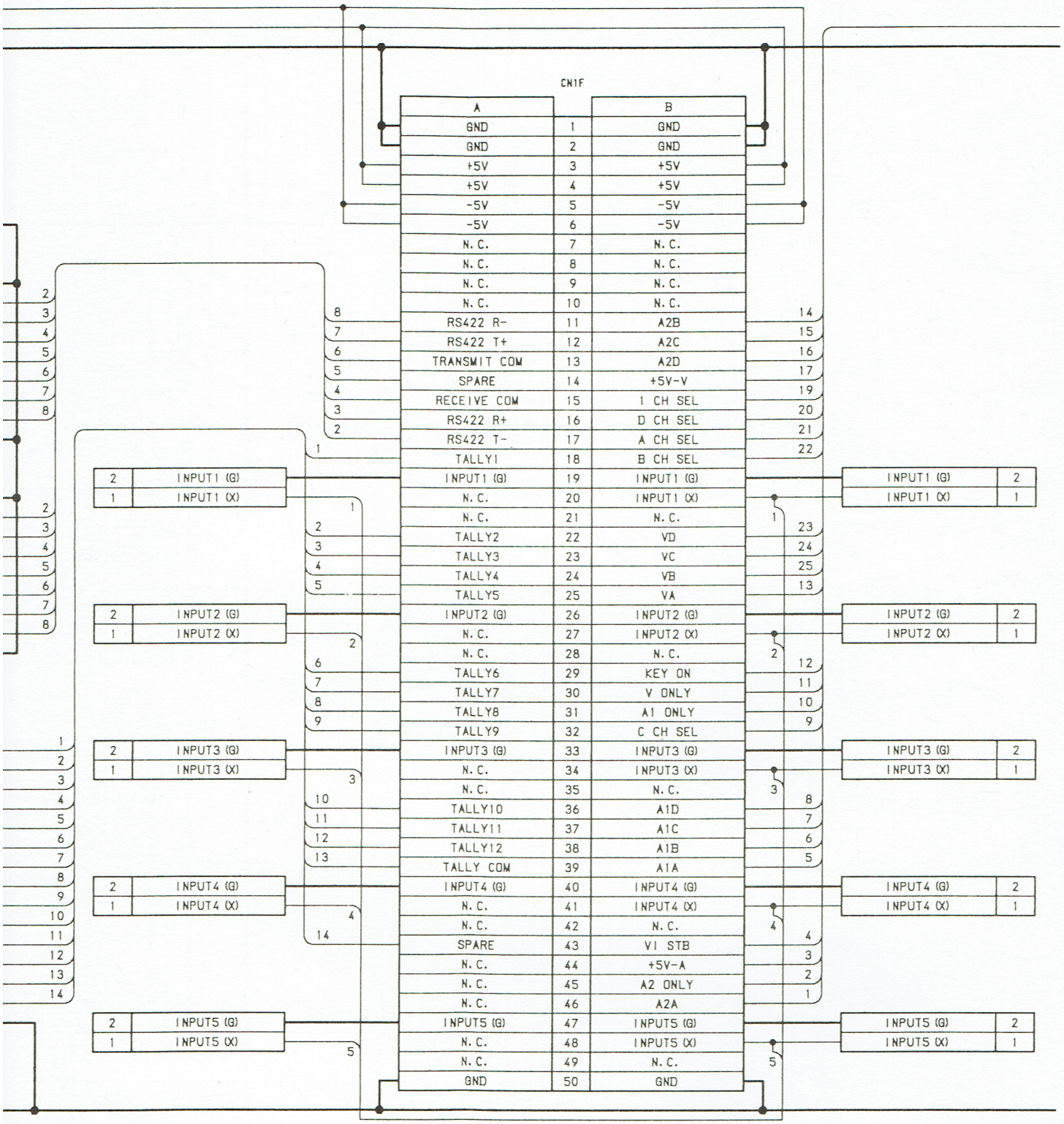
抵抗は全て 1/6W, 金属被膜 (RN)

SW-354

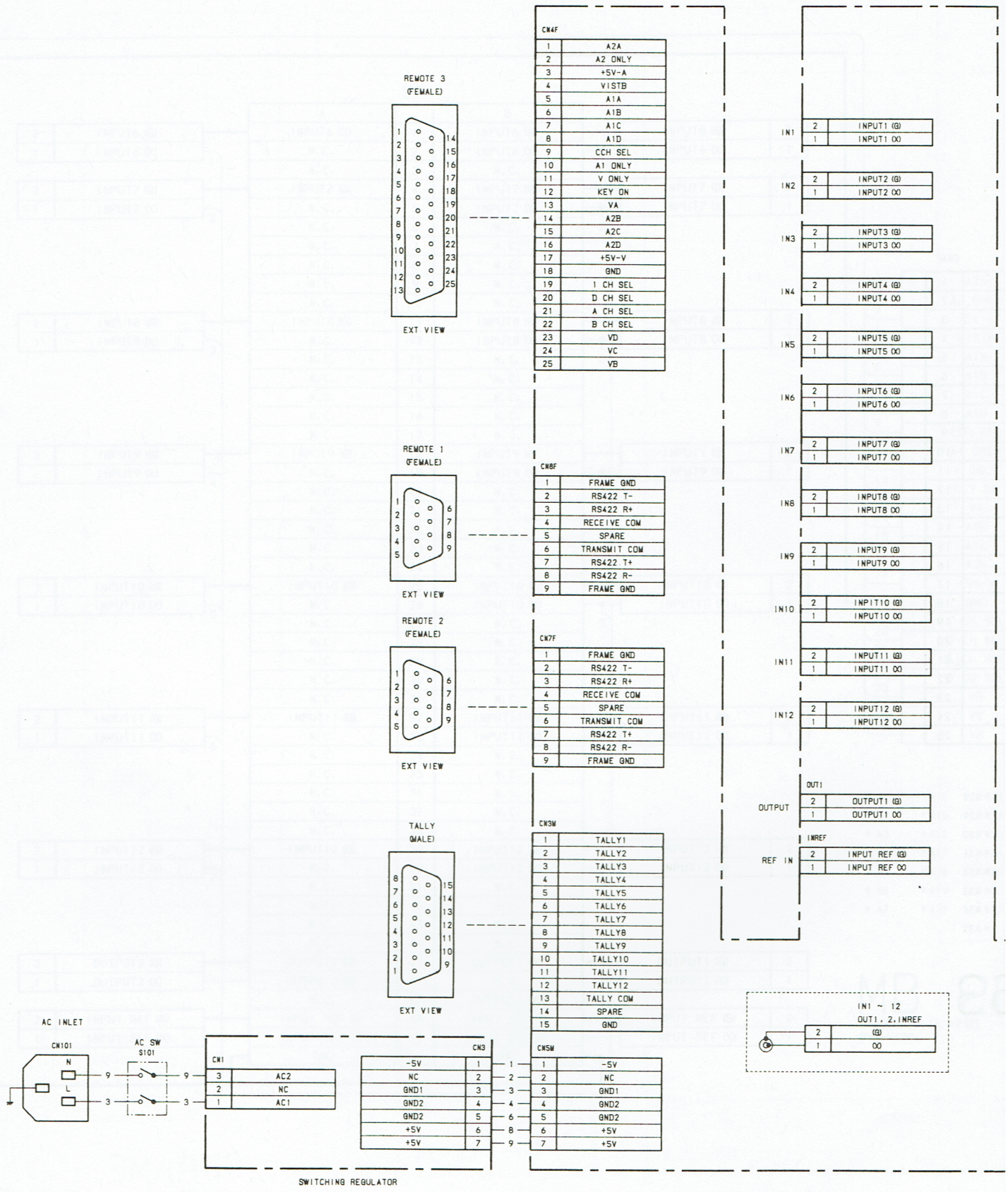
1-630-049-11 (1)
BVS-V1201
BKS-R1210

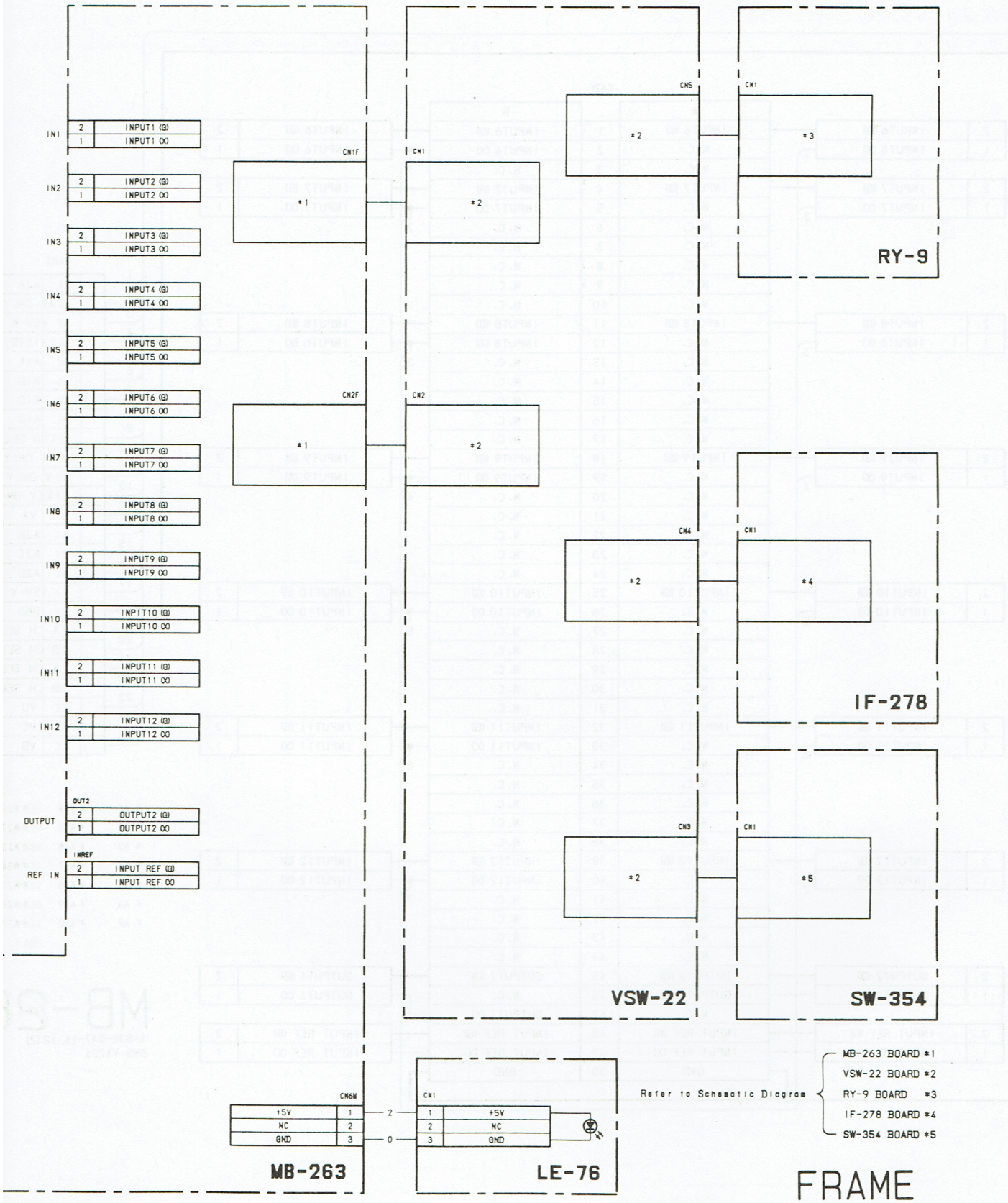
MB-263 ; MOTHER BOARD




CN1F
A
B
GND 1 GND
GND 2 GND
+5V 3 +5V
+5V 4 +5V
-5V 5 -5V
-5V 6 -5V
N.C. 7 N.C.
N.C. 8 N.C.
N.C. 9 N.C.
N.C. 10 N.C.
RS422 R- 11 A2B
RS422 T+ 12 A2C
TRANSMIT COM 13 A2D
SPARE 14 +5V-V
RECEIVE COM 15 1 CH SEL
RS422 R+ 16 D CH SEL
RS422 T- 17 A CH SEL
TALLY1 18 B CH SEL
INPUT1 (G) 19 INPUT1 (G)
N.C. 20 INPUT1 (X)
N.C. 21 N.C.
TALLY2 22 VD
TALLY3 23 VC
TALLY4 24 VB
TALLY5 25 VA
INPUT2 (G) 26 INPUT2 (G)
N.C. 27 INPUT2 (X)
N.C. 28 N.C.
TALLY6 29 KEY ON
TALLY7 30 V ONLY
TALLY8 31 A1 ONLY
TALLY9 32 C CH SEL
INPUT3 (G) 33 INPUT3 (G)
N.C. 34 INPUT3 (X)
N.C. 35 N.C.
TALLY10 36 A1D
TALLY11 37 A1C
TALLY12 38 A1B
TALLY COM 39 A1A
INPUT4 (G) 40 INPUT4 (G)
N.C. 41 INPUT4 (X)
N.C. 42 N.C.
SPARE 43 V1 STB
N.C. 44 +5V-A
N.C. 45 A2 ONLY
N.C. 46 A2A
INPUT5 (G) 47 INPUT5 (G)
N.C. 48 INPUT5 (X)
N.C. 49 N.C.
GND 50 GND
INPUT1 (G)
INPUT1 (X)
INPUT2 (G)
INPUT2 (X)
INPUT3 (G)
INPUT3 (X)
INPUT4 (G)
INPUT4 (X)
INPUT5 (G)
INPUT5 (X)

FRAME


REMOTE 3 (FEMALE)
EXT VIEW
CN4F
1 A2A
2 A2 ONLY
3 +5V-A
4 VISTB
5 A1A
6 A1B
7 A1C
8 A1D
9 CCH SEL
10 A1 ONLY
11 V ONLY
12 KEY ON
13 VA
14 A2B
15 A2C
16 A2D
17 +5V-V
18 GND
19 1 CH SEL
20 D CH SEL
21 A CH SEL
22 B CH SEL
23 VD
24 VC
25 VB
REMOTE 1 (FEMALE)
EXT VIEW
CN8F
1 FRAME GND
2 RS422 T-
3 RS422 R+
4 RECEIVE COM
5 SPARE
6 TRANSMIT COM
7 RS422 T+
8 RS422 R-
9 FRAME GND
REMOTE 2 (FEMALE)
EXT VIEW
CN7F
1 FRAME GND
2 RS422 T-
3 RS422 R+
4 RECEIVE COM
5 SPARE
6 TRANSMIT COM
7 RS422 T+
8 RS422 R-
9 FRAME GND
TALLY (MALE)
EXT VIEW
CN3M
1 TALLY1
2 TALLY2
3 TALLY3
4 TALLY4
5 TALLY5
6 TALLY6
7 TALLY7
8 TALLY8
9 TALLY9
10 TALLY10
11 TALLY11
12 TALLY12
13 TALLY COM
14 SPARE
15 GND
IN1 2 INPUT1 (G) 1 INPUT1 (X)
IN2 2 INPUT2 (G) 1 INPUT2 (X)
IN3 2 INPUT3 (G) 1 INPUT3 (X)
IN4 2 INPUT4 (G) 1 INPUT4 (X)
IN5 2 INPUT5 (G) 1 INPUT5 (X)
IN6 2 INPUT6 (G) 1 INPUT6 (X)
IN7 2 INPUT7 (G) 1 INPUT7 (X)
IN8 2 INPUT8 (G) 1 INPUT8 (X)
IN9 2 INPUT9 (G) 1 INPUT9 (X)
IN10 2 INPIT10 (G) 1 INPUT10 (X)
IN11 2 INPUT11 (G) 1 INPUT11 (X)
IN12 2 INPUT12 (G) 1 INPUT12 (X)
OUT1
OUTPUT 2 OUTPUT1 (G) 1 OUTPUT1 (X)
INREF
REF IN 2 INPUT REF (G) 1 INPUT REF (X)
IN1 ~ 12
OUT1, 2, INREF
2 (G)
1 (X)
AC INLET
CN101
N
L
AC SW
S101
CN1
3 AC2
2 NC
1 AC1
CN3
-5V 1
NC 2
GND1 3
GND2 4
GND2 5
+5V 6
+5V 7
CN5M
1 -5V
2 NC
3 GND1
4 GND2
5 GND2
6 +5V
7 +5V
SWITCHING REGULATOR



FRAME

BVS-V1201

SECTION 7
PRINTED WIRING BOARDS

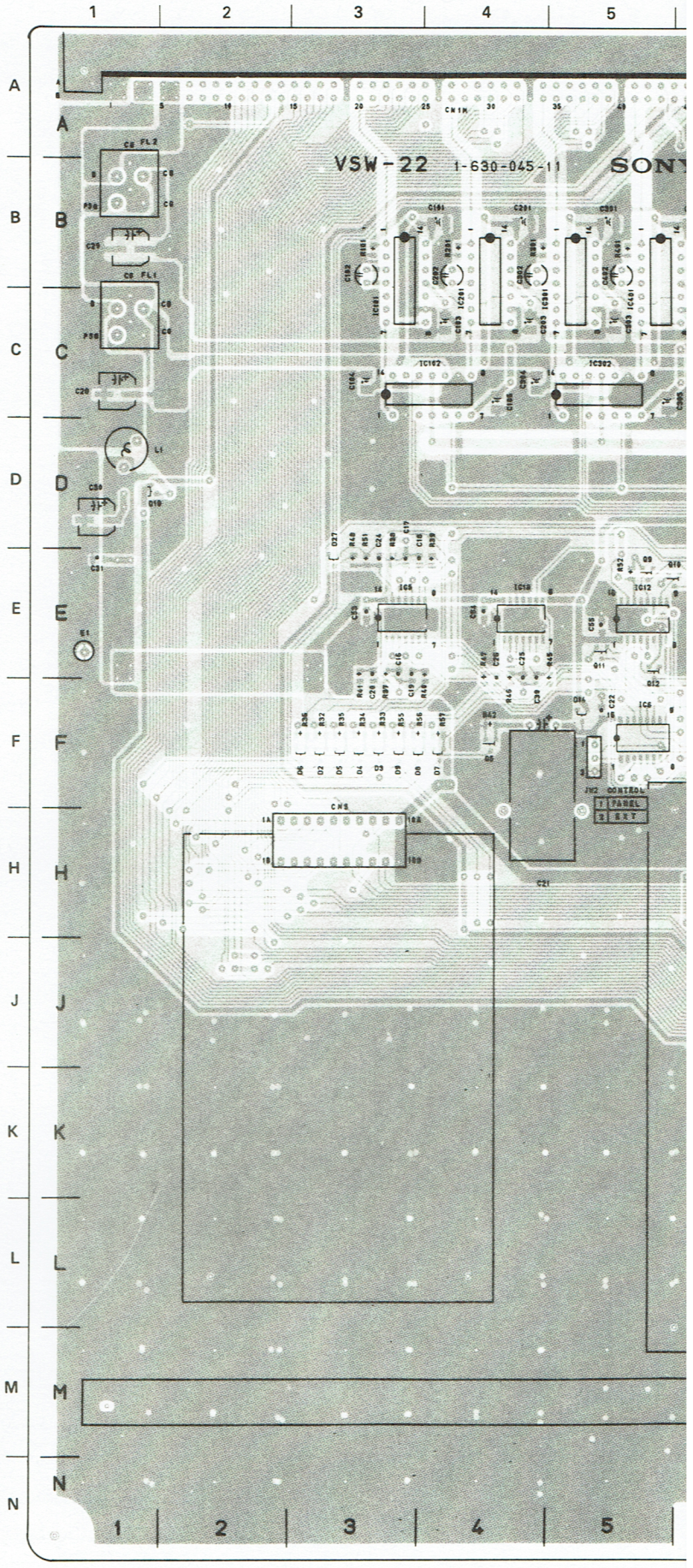
VSW-22 ; VIDEO SWITCH BOARD

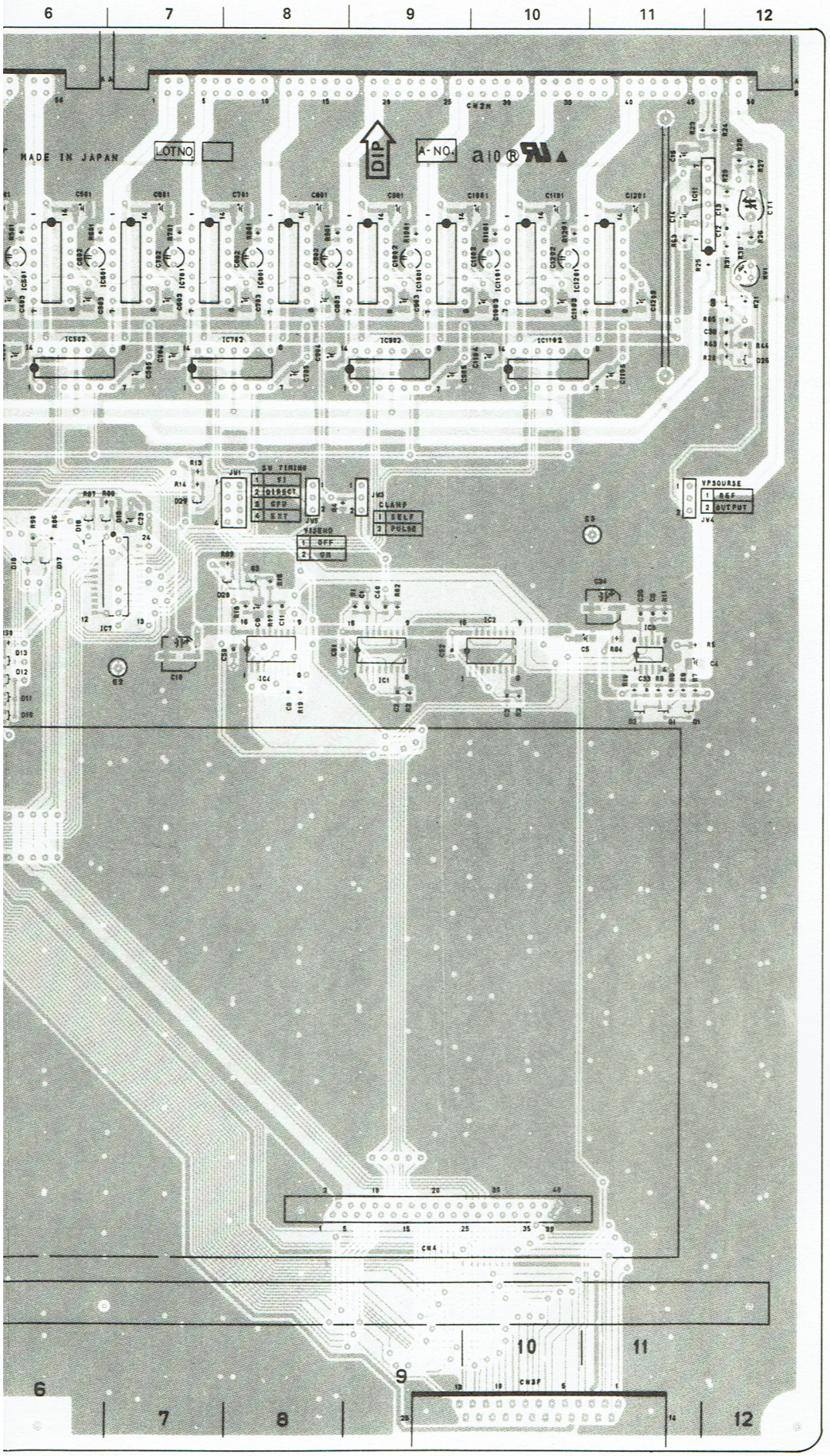
S/N 10001 TO 10020

BVS-V1201

VSW-22 (1-630-045-11)

CN1	A - 4
CN2	A - 10
CN3	N - 10
CN4	M - 9
CN5	F - 3
CT1	B - 12
D1	F - 11
D2	F - 3
D3	F - 3
D4	F - 3
D5	F - 3
D6	F - 3
D7	F - 4
D8	F - 3
D9	F - 3
D10	F - 6
D11	F - 6
D12	F - 6
D13	F - 6
D14	F - 5
D15	E - 7
D16	E - 6
D17	E - 6
D18	E - 6
D19	D - 1
D26	C - 12
D27	D - 3
D28	E - 7
D29	D - 7
E1	E - 1
E2	F - 7
E3	E - 11
FL1	B - 1
FL2	A - 1
IC1	F - 9
IC2	E - 10
IC3	E - 11
IC4	F - 8
IC5	E - 3
IC6	F - 5
IC7	E - 6
IC11	B - 11
IC12	E - 5
IC13	E - 4
IC101	C - 3
IC102	C - 4
IC201	C - 4
IC301	C - 4
IC302	C - 5
IC401	C - 5
IC501	C - 6
IC502	C - 6
IC601	C - 6
IC701	C - 7
IC702	C - 8
IC801	C - 8
IC901	C - 8
IC902	C - 9
IC1001	C - 9
IC1101	C - 10
IC1102	C - 10
IC1201	C - 10
JW1	D - 8
JW2	F - 5
JW3	D - 9
JW4	E - 11
JW5	E - 8
Q1	F - 11
Q2	F - 11
Q3	E - 8
Q5	F - 4
Q8	C - 12
Q9	E - 5
Q10	E - 5
Q11	E - 5
Q12	F - 5
RV1	C - 12





VSW-22 -COMPONENT SIDE-

1-630-045-11 (1)

BVS-V1201

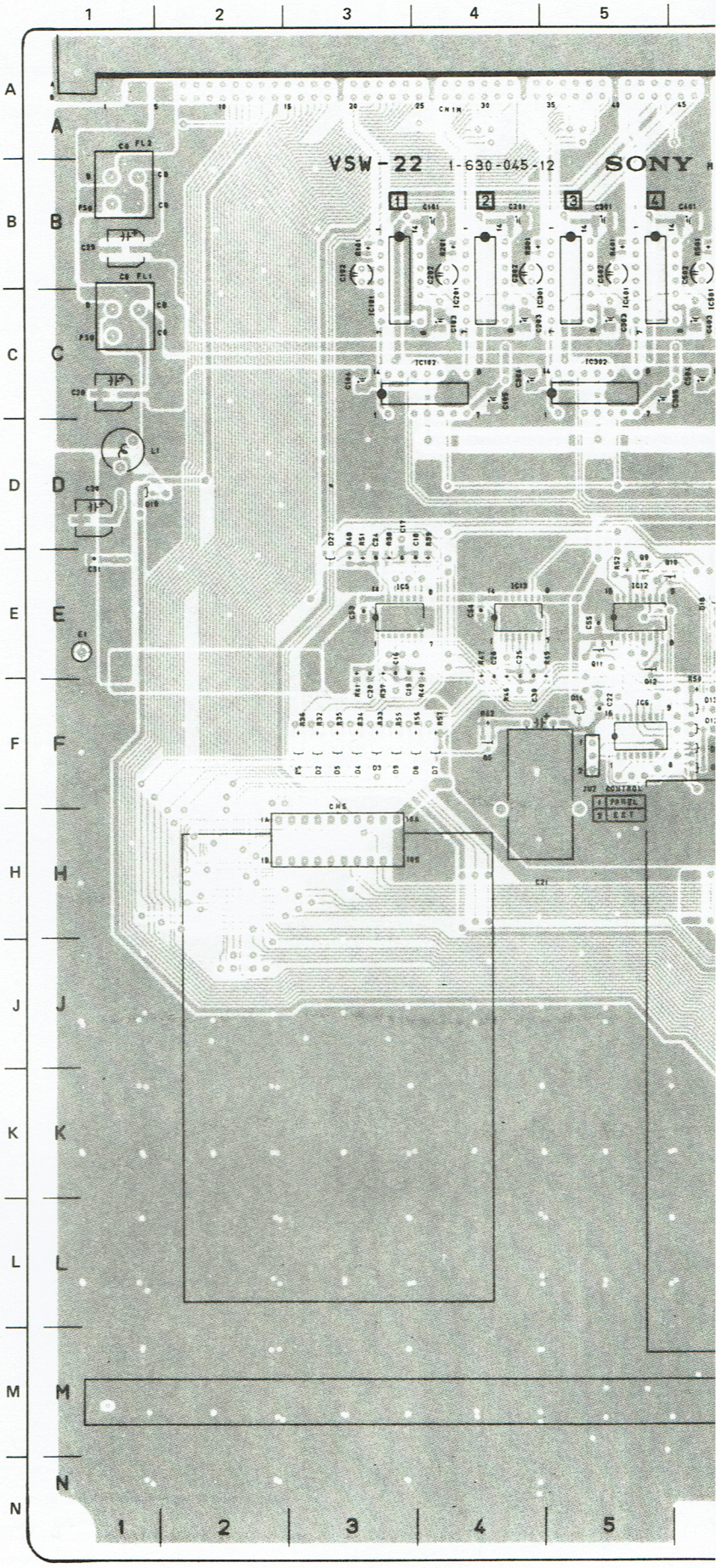
VSW-22 ; VIDEO SWITCH BOARD

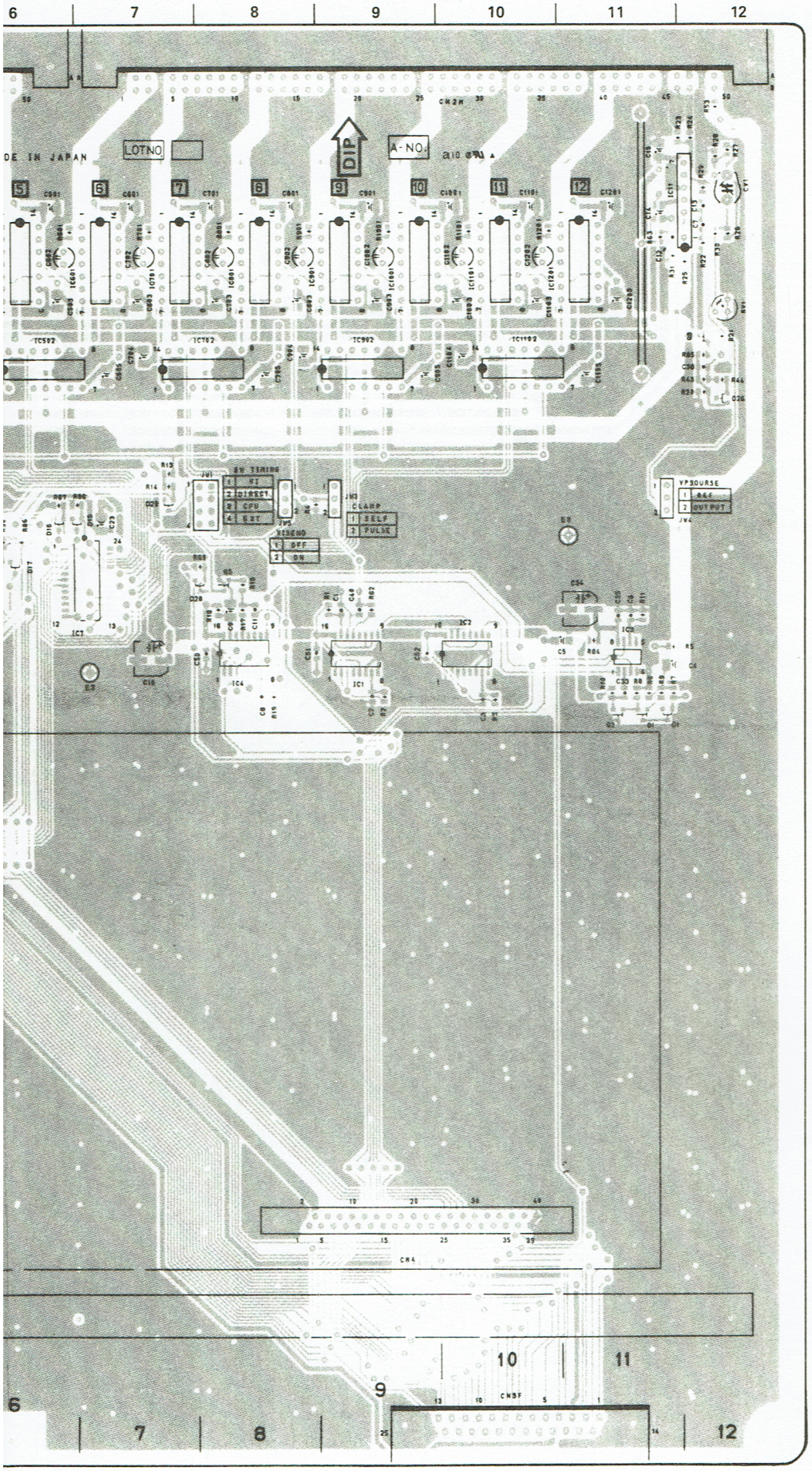
S/N 10021 AND HIGHER

BVS-V1201

VSW-22 (1-630-045-12)

CN1	A - 4
CN2	A - 10
CN3	N - 10
CN4	M - 9
CN5	H - 3
CV1	B - 12
D1	F - 11
D2	F - 3
D3	F - 3
D4	F - 3
D5	F - 3
D6	F - 3
D7	F - 4
D8	F - 3
D9	F - 3
D10	F - 6
D11	F - 6
D12	F - 6
D13	F - 6
D14	F - 5
D15	E - 7
D16	E - 6
D17	E - 6
D18	E - 6
D19	D - 1
D26	D - 12
D27	D - 3
D28	E - 7
D29	D - 7
E1	E - 1
E2	F - 7
E3	E - 11
FL1	B - 1
FL2	A - 1
IC1	F - 9
IC2	E - 10
IC3	E - 11
IC4	F - 8
IC5	E - 3
IC6	F - 5
IC7	E - 6
IC11	B - 11
IC12	E - 5
IC13	E - 4
IC101	C - 3
IC102	C - 4
IC201	C - 4
IC301	C - 4
IC302	C - 5
IC401	C - 5
IC501	C - 6
IC502	C - 6
IC601	C - 6
IC701	C - 7
IC702	C - 8
IC801	C - 8
IC901	C - 8
IC902	C - 9
IC1001	C - 9
IC1101	C - 10
IC1102	C - 10
IC1201	C - 10
JW1	D - 8
JW2	F - 5
JW3	D - 9
JW4	E - 11
JW5	E - 8
Q1	F - 11
Q2	F - 11
Q3	E - 8
Q5	F - 4
Q8	C - 12
Q9	E - 5
Q10	E - 5
Q11	E - 5
Q12	F - 5
RV1	C - 12

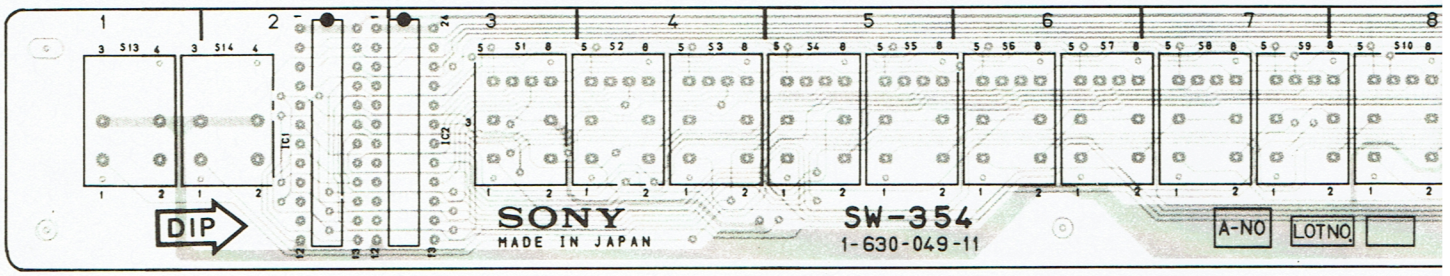


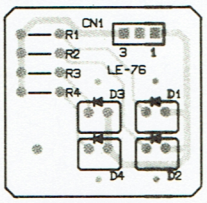


VSW-22 -COMPONENT SIDE-

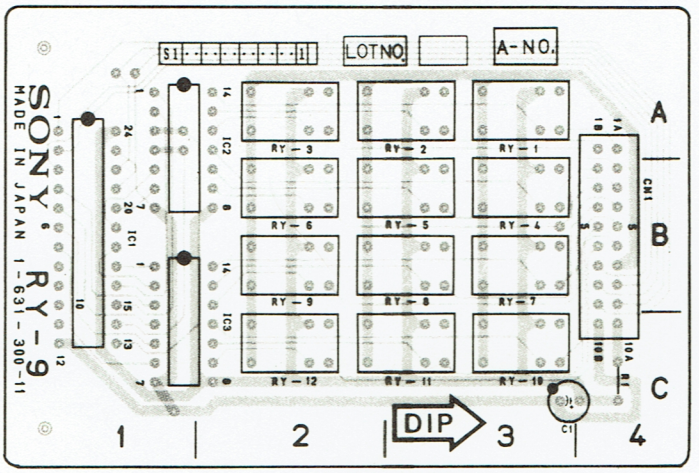
1-630-045-12 (1)
BVS-V1201

SW-354; SWICH BOARD
LE-76; LED BOARD
RY-9; TALLY BOARD

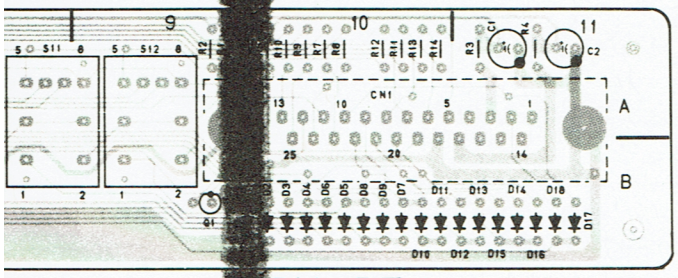




LE-76
-COMPONENT SIDE-
1-631-489-11 (1)
BVS-A1201
BVS-V1201
BVS-A1212
BVS-V1212



RY-9 -COMPONENT SIDE-
1-631-300-11 (1)
BVS-V1201

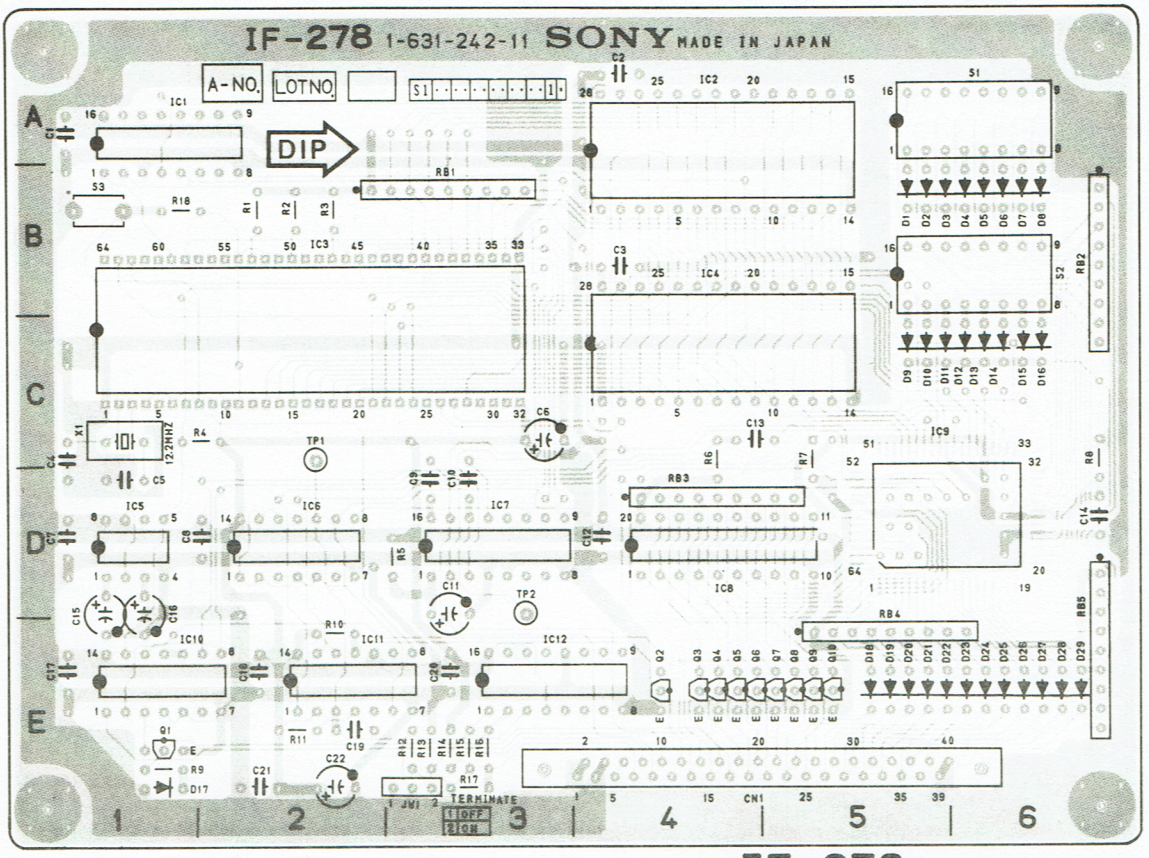


SW-354 -COMPONENT SIDE-

1-630-049-11 (1)
BVS-V1201
BKS-R1210

IF-278 ; SERIAL INTERFACE BOARD

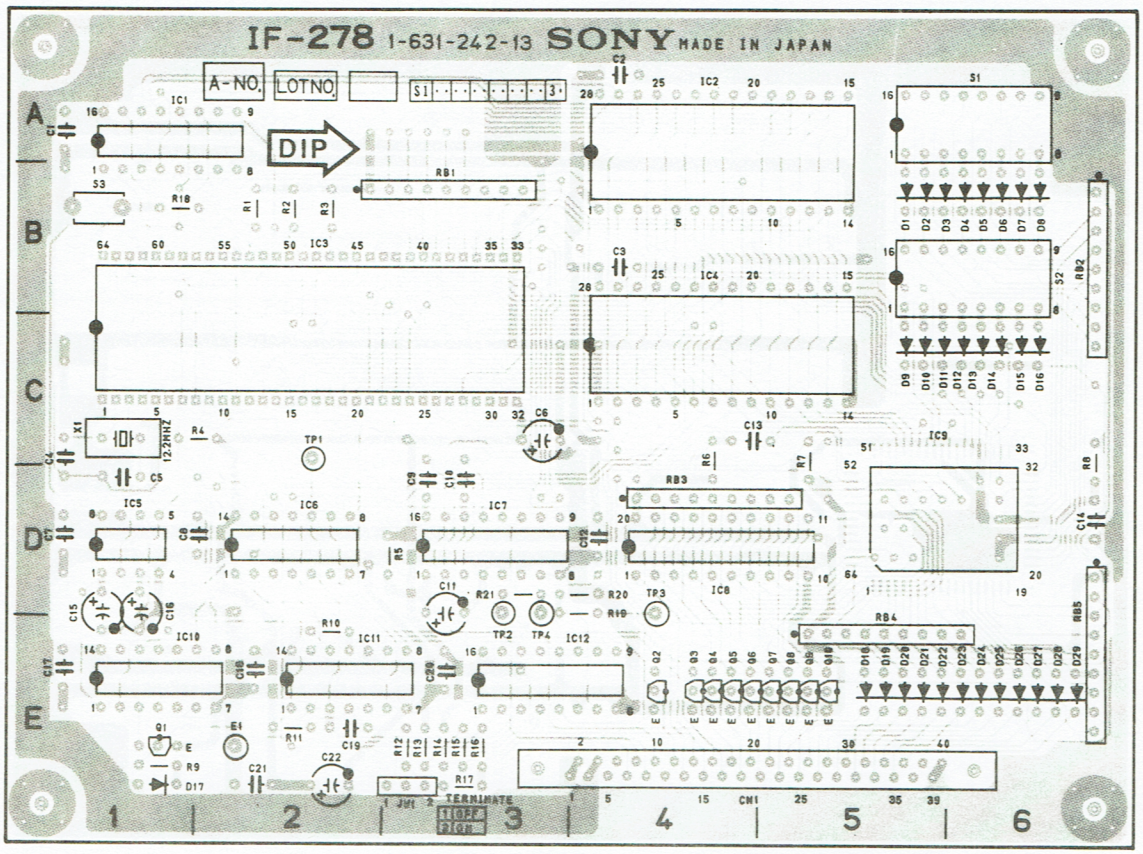
S/N 10001 TO 10020



IF-278 -COMPONENT SIDE-

1-631-242-11 (1)
BVS-A1201
BVS-V1201

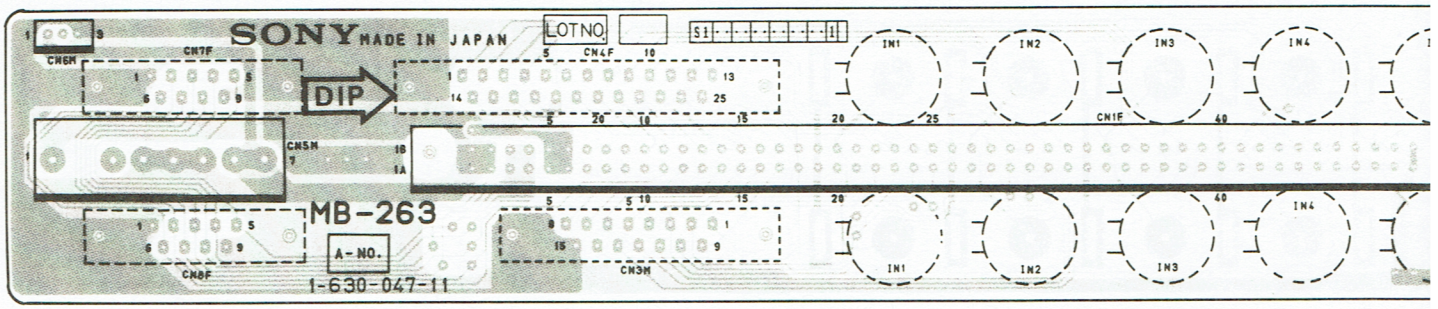
S/N 10021 AND HIGHER



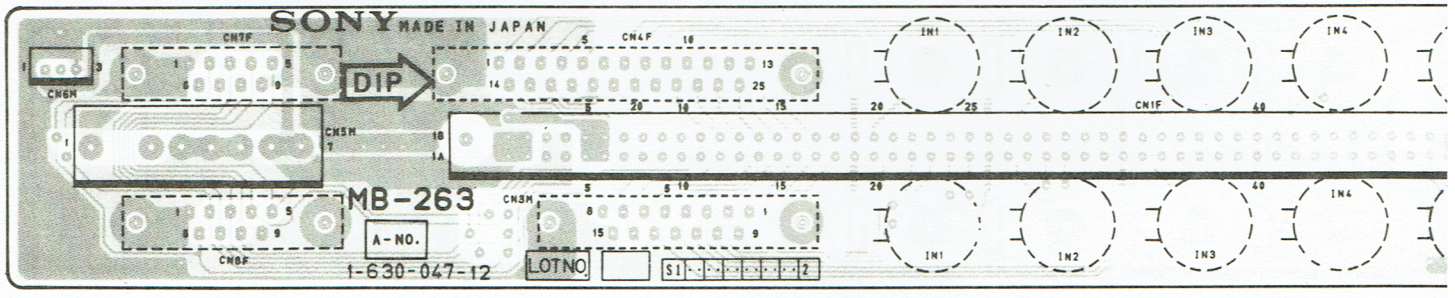
IF-278 -COMPONENT SIDE-

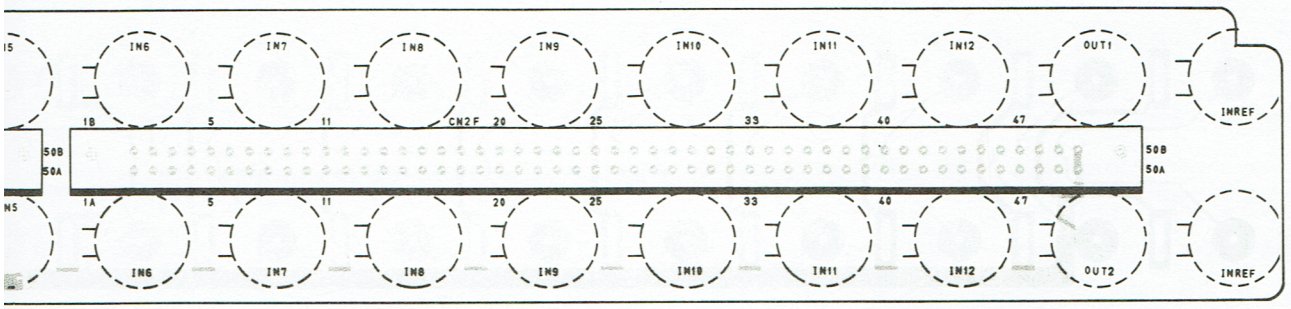
1-631-242-12, 13 (1)
BVS-A1201
BVS-V1201

MB-263 ; MOTHER BOARD S/N 10001 TO 10020



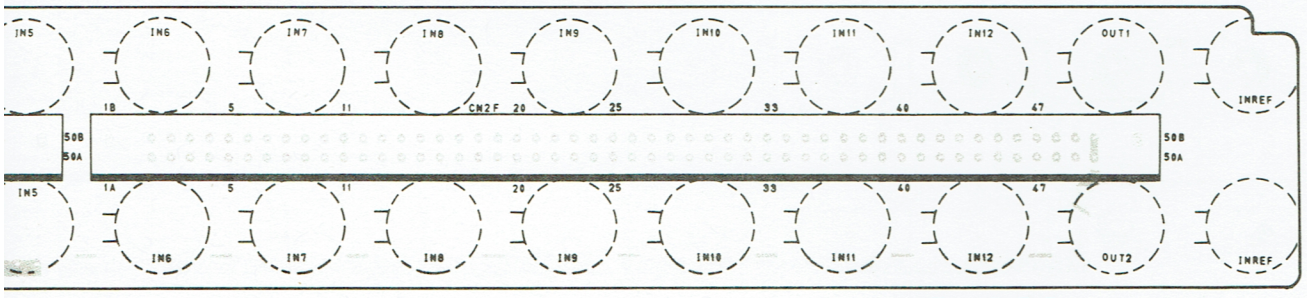
MB-263 ; MOTHER BOARD S/N 10021 AND HIGHER





MB-263 -COMPONENT SIDE-

1-630-047-11 (1)
BVS-V1201



MB-263 -COMPONENT SIDE-

1-630-047-12 (1)
BVS-V1201

SECTION 8
SPARE PARTS AND FIXTURE

8-1. PARTS INFORMATION

(1) The shaded and ⚠ -marked components are critical to safety.
Replace only with the same components as specified.

(2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape and outside view from the parts which are used in the unit. This is due to "accommodating improved parts and/or engineering changes" or "standardization of genuine parts".
. This manual's exploded views and electrical spare parts lists indicate the part numbers of "the present standardized genuine parts".
. Regarding engineering part changes by our engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with "s" in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(4) Item with no part number and/or no description are not stocked because they are seldom required for routine service.

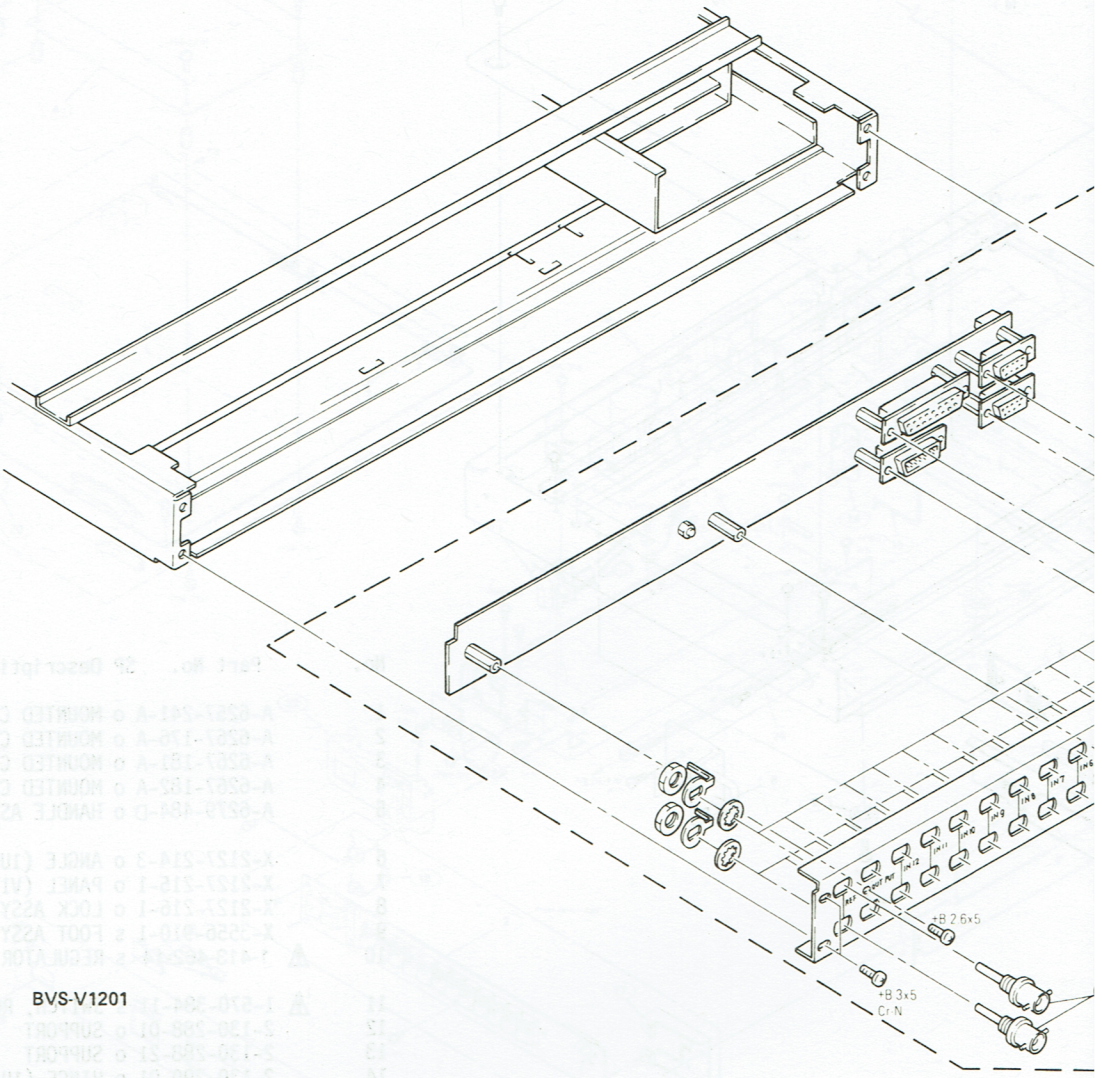
(5) (T) after a spring description is shown on the exploded views in order to indicate the number of a spring turn required for the use.
(Example)
Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

8-2. EXPLODED VIEW

. Exploded views are composed of the following blocks.

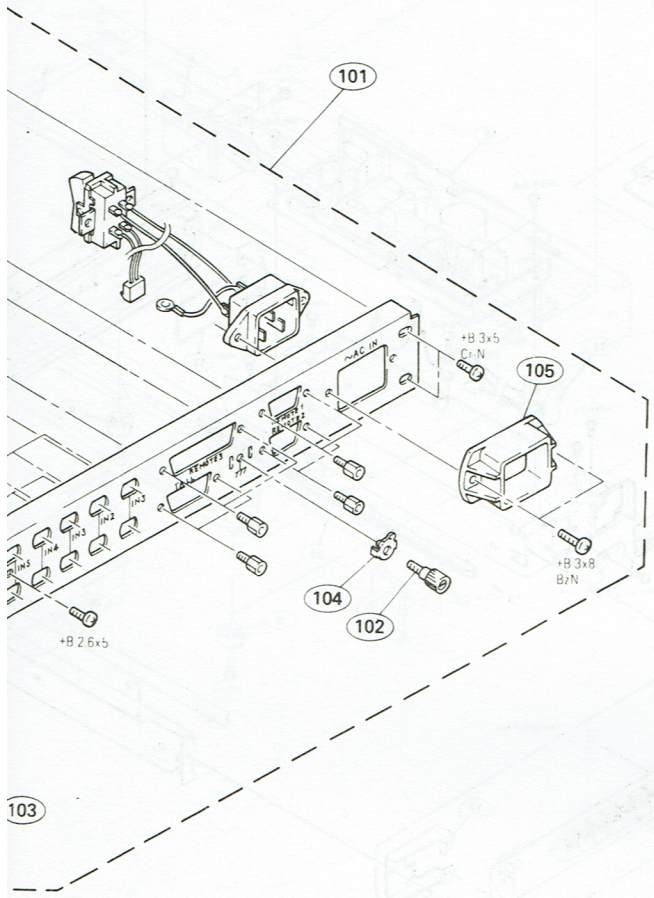
(1) Chassis
(2) Rear Panel

Rear Panel

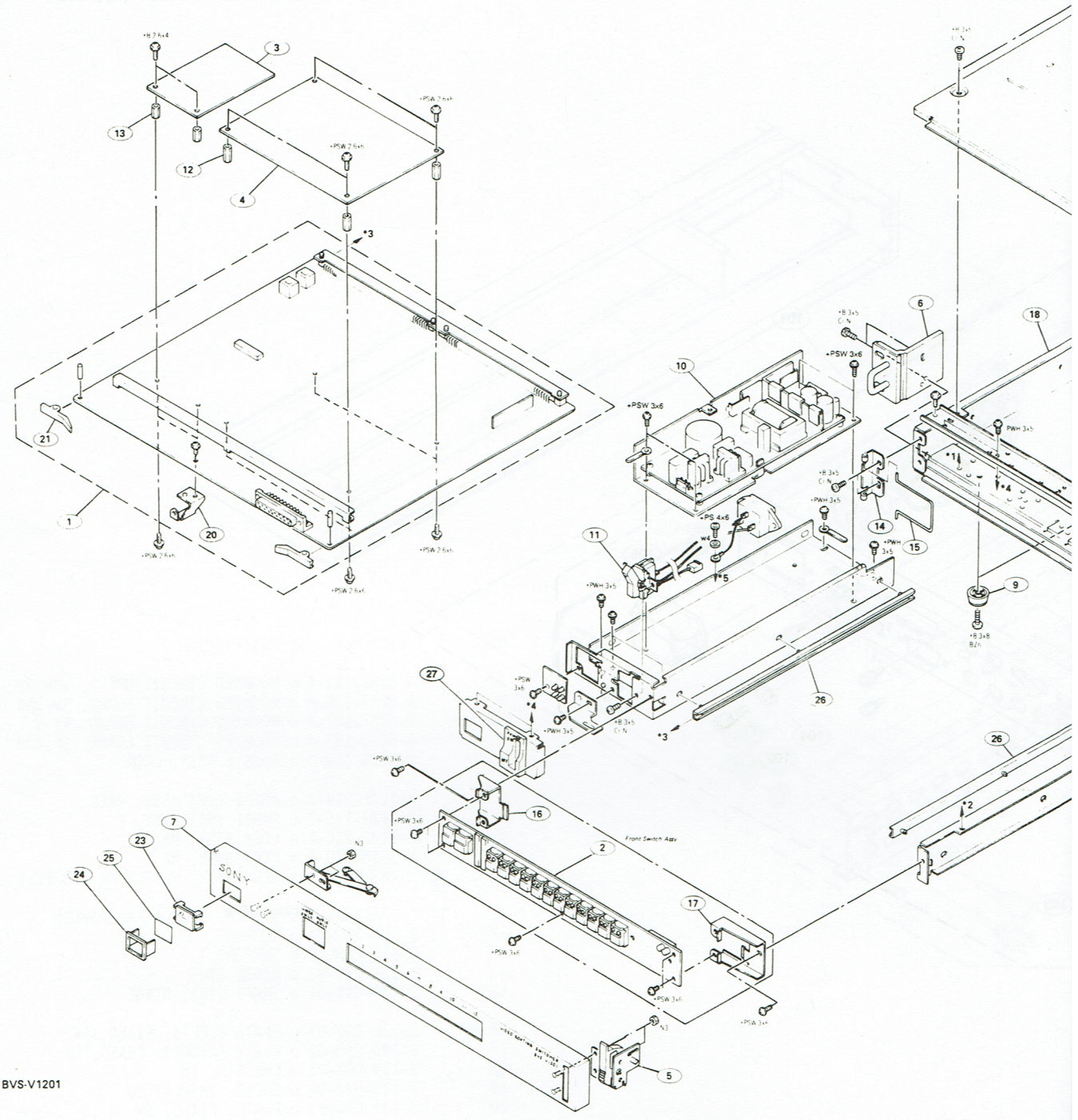


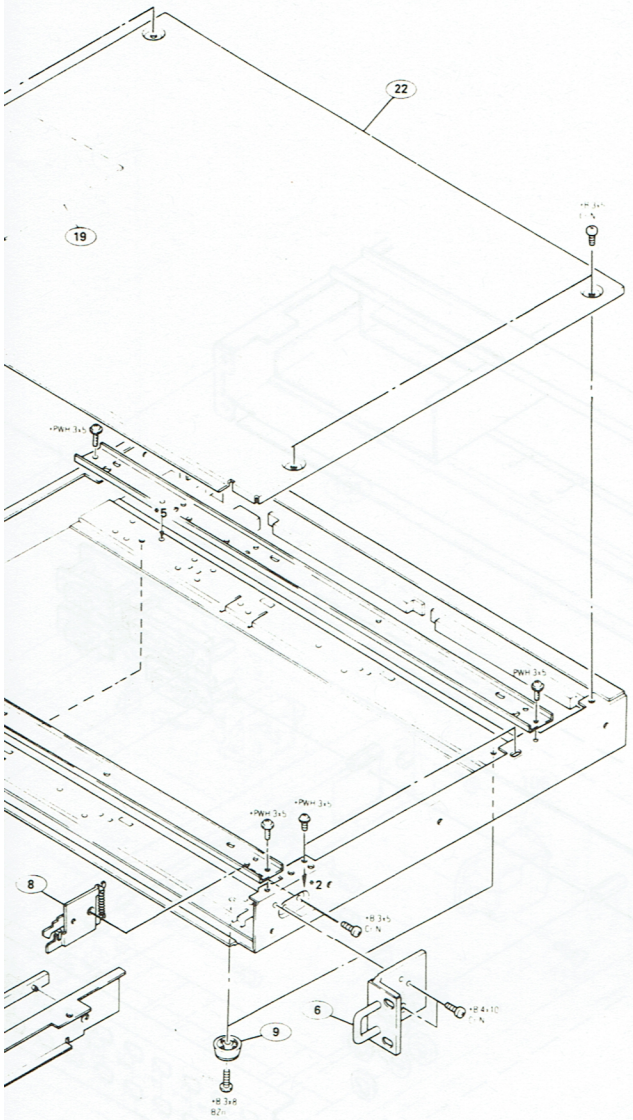
BVS-V1201

No.	Part No.	SP	Description
101	A-6274-293-A	o	PANEL (V1) ASSY, REAR
102	X-2068-004-1	s	TERMINAL ASSY
103	1-561-336-41	s	CONNECTOR, COAXIAL
104	2-068-008-01	s	WASHER
105	2-990-241-01	o	HOLDER (A),PLUG



Chassis





No.		Part No.	SP	Description
1		A-6257-241-A	o	MOUNTED CIRCUIT BOARD, VSW-22
2		A-6267-176-A	o	MOUNTED CIRCUIT BOARD, SW-354
3		A-6267-181-A	o	MOUNTED CIRCUIT BOARD, RY-9
4		A-6267-182-A	o	MOUNTED CIRCUIT BOARD, IF-278
5		A-6279-484-D	o	HANDLE ASSY, DOOR
6		X-2127-214-3	o	ANGLE (1U) ASSY, RACK
7		X-2127-215-1	o	PANEL (V1) ASSY, F
8		X-2127-216-1	o	LOCK ASSY, MF
9		X-3556-910-1	s	FOOT ASSY, MF
10	⚠	1-413-462-14	s	REGULATOR, SWITCHING (ED-111)
11	⚠	1-570-384-11	s	SWITCH, ROCKER (AC POWER)
12		2-130-288-01	o	SUPPORT
13		2-130-288-21	o	SUPPORT
14		2-130-290-01	o	HINGE (1U)
15		2-130-291-01	o	SHAFT (1U), HINGE
16		2-130-292-01	o	PLATE (LEFT), FIXED, SW
17		2-130-293-01	o	PLATE (RIGHT), FIXED, SW
18		2-139-002-01	o	CHASSIS, 1U
19		2-139-022-01	o	SHEET, INSULATING
20		2-139-085-01	o	PLATE, FIXED, SW
21		2-182-909-02	o	LEVER, PRINTED CIRCUIT BOARD
22		2-182-935-02	o	PLATE (D350), TOP
23		2-139-193-02	s	WINDOW, INDICATOR
24		2-139-192-01	s	FRAME, INDICATOR WINDOW
25		2-249-353-01	o	COVER, LAMP
26		3-673-676-32	o	RAIL, PRINTED CIRCUIT BOARD GUIDE
27		4-604-107-11	o	GUARD, POWER SW

8-3. ELECTRICAL PARTS LIST

ABBREVIATIONS

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
C□□, CT□□	CAPACITOR	IC□□	IC	Q□□	TRANSISTOR
CF□□	CERAMIC FILTER	J□□	JACK	R□□, RV□□	RESISTOR
CN□□	CONNECTOR	L□□	INDUCTOR	RY□□	RELAY
D□□	DIODE	M□□	MOTOR	S□□, SW□□	SWITCH
DL□□	DELAY LINE	ME□□	METER	SB□□	SOLAR BATTERY
F□□	FUSE	MIC□□	MICROPHONE	T□□	TRANSFORMER
FB□□	FERRITE BEAD	PG□□	PG COIL	TH□□	THERMISTOR
FL□□	FILTER	PL□□	LAMP	X□□	CRYSTAL
H□□	HEAD	PM□□	SOLENOIDE		

All capacitors are in micro farads unless otherwise specified.

All inductors are in micro henries unless otherwise specified.

All resistors are in ohms.

General Purpose Electrical Parts List

Parts that are not listed in the "reference numbers order list" are shown in following list.
Reference numbers are omitted.

CAPACITOR, CERAMIC

Part No.	SP	Description			
1-163-083-00	s	CAP, CHIP CERAMIC	1pF	+-0.25pF	5
1-163-085-00	s	CAP, CHIP CERAMIC	2pF	+-0.25pF	5
1-163-087-00	s	CAP, CHIP CERAMIC	4pF	+-0.25pF	5
1-163-089-00	s	CAP, CHIP CERAMIC	6pF	+-0.5pF	50
1-163-091-00	s	CAP, CHIP CERAMIC	8pF	+-0.5pF	50
1-163-093-00	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-097-00	s	CAP, CHIP CERAMIC	15pF	5%	50V
1-163-101-00	s	CAP, CHIP CERAMIC	22pF	5%	50V
1-163-105-00	s	CAP, CHIP CERAMIC	33pF	5%	50V
1-163-109-00	s	CAP, CHIP CERAMIC	47pF	5%	50V
1-163-113-00	s	CAP, CHIP CERAMIC	68pF	5%	50V
1-163-117-00	s	CAP, CHIP CERAMIC	100pF	5%	50V
1-163-121-00	s	CAP, CHIP CERAMIC	150pF	5%	50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF	5%	50V
1-163-129-00	s	CAP, CHIP CERAMIC	330pF	5%	50V
1-163-133-00	s	CAP, CHIP CERAMIC	470pF	5%	50V
1-163-137-00	s	CAP, CHIP CERAMIC	680pF	5%	50V
1-163-141-00	s	CAP, CHIP CERAMIC	1000pF	5%	50V
1-163-145-00	s	CAP, CHIP CERAMIC	1500pF	10%	50V
1-163-013-00	s	CAP, CHIP CERAMIC	2200pF	10%	50V
1-163-015-00	s	CAP, CHIP CERAMIC	3300pF	10%	50V
1-163-017-00	s	CAP, CHIP CERAMIC	4700pF	10%	50V
1-163-019-00	s	CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-021-00	s	CAP, CHIP CERAMIC	0.01	10%	50V
1-163-023-00	s	CAP, CHIP CERAMIC	0.015	10%	50V
1-163-034-00	s	CAP, CHIP CERAMIC	0.033		50V
1-163-035-00	s	CAP, CHIP CERAMIC	0.047		50V
1-163-036-00	s	CAP, CHIP CERAMIC	0.068		50V
1-163-038-00	s	CAP, CHIP CERAMIC	0.1		50V

CAPACITOR, CHIP TANTALUM

Part No.	SP	Description			
1-135-070-00	s	CAP, CHIP TANTALUM	0.1	10%	35V
1-135-071-21	s	CAP, CHIP TANTALUM	0.15	10%	35V
1-135-072-21	s	CAP, CHIP TANTALUM	0.22	10%	35V
1-135-073-00	s	CAP, CHIP TANTALUM	0.33	10%	35V
1-135-083-00	s	CAP, CHIP TANTALUM	0.47	10%	25V
1-135-074-21	s	CAP, CHIP TANTALUM	0.47	10%	35V
1-135-087-21	s	CAP, CHIP TANTALUM	0.68	10%	20V
1-135-075-21	s	CAP, CHIP TANTALUM	0.68	10%	35V
1-135-091-21	s	CAP, CHIP TANTALUM	1.0	10%	16V
1-135-076-21	s	CAP, CHIP TANTALUM	1.0	10%	35V
1-135-084-21	s	CAP, CHIP TANTALUM	1.5	10%	25V
1-135-077-21	s	CAP, CHIP TANTALUM	1.5	10%	35V
1-135-088-21	s	CAP, CHIP TANTALUM	2.2	10%	20V
1-135-078-21	s	CAP, CHIP TANTALUM	2.2	10%	35V
1-135-092-21	s	CAP, CHIP TANTALUM	3.3	10%	16V
1-135-079-21	s	CAP, CHIP TANTALUM	3.3	10%	35V
1-135-096-21	s	CAP, CHIP TANTALUM	4.7	10%	10V
1-135-085-21	s	CAP, CHIP TANTALUM	4.7	10%	25V
1-135-100-21	s	CAP, CHIP TANTALUM	6.8	10%	6.3V
1-135-089-21	s	CAP, CHIP TANTALUM	6.8	10%	20V
1-135-093-21	s	CAP, CHIP TANTALUM	10	10%	16V
1-135-097-21	s	CAP, CHIP TANTALUM	15	10%	10V
1-135-101-21	s	CAP, CHIP TANTALUM	22	10%	6.3V
1-135-098-21	s	CAP, CHIP TANTALUM	47	10%	6.3V

RESISTOR, CHIP METAL

Part No. SP Description

1-216-603-11 s RES, CHIP METAL 10 1% 1/10W
1-216-605-11 s RES, CHIP METAL 12 1% 1/10W
1-216-609-11 s RES, CHIP METAL 18 1% 1/10W
1-216-611-11 s RES, CHIP METAL 22 1% 1/10W
1-216-614-11 s RES, CHIP METAL 30 1% 1/10W

1-216-617-11 s RES, CHIP METAL 39 1% 1/10W
1-216-619-11 s RES, CHIP METAL 47 1% 1/10W
1-216-620-11 s RES, CHIP METAL 51 1% 1/10W
1-216-623-11 s RES, CHIP METAL 68 1% 1/10W
1-216-624-11 s RES, CHIP METAL 75 1% 1/10W

1-216-625-11 s RES, CHIP METAL 82 1% 1/10W
1-216-626-11 s RES, CHIP METAL 91 1% 1/10W
1-216-627-11 s RES, CHIP METAL 100 1% 1/10W
1-216-629-11 s RES, CHIP METAL 120 1% 1/10W
1-216-631-11 s RES, CHIP METAL 150 1% 1/10W

1-216-633-11 s RES, CHIP METAL 180 1% 1/10W
1-216-634-11 s RES, CHIP METAL 200 1% 1/10W
1-216-635-11 s RES, CHIP METAL 220 1% 1/10W
1-216-636-11 s RES, CHIP METAL 240 1% 1/10W
1-216-637-11 s RES, CHIP METAL 270 1% 1/10W

1-216-638-11 s RES, CHIP METAL 300 1% 1/10W
1-216-639-11 s RES, CHIP METAL 330 1% 1/10W
1-216-640-11 s RES, CHIP METAL 360 1% 1/10W
1-216-641-11 s RES, CHIP METAL 390 1% 1/10W
1-216-642-11 s RES, CHIP METAL 430 1% 1/10W

1-216-643-11 s RES, CHIP METAL 470 1% 1/10W
1-216-644-11 s RES, CHIP METAL 510 1% 1/10W
1-216-645-11 s RES, CHIP METAL 560 1% 1/10W
1-216-647-11 s RES, CHIP METAL 680 1% 1/10W
1-216-648-11 s RES, CHIP METAL 750 1% 1/10W

1-216-649-11 s RES, CHIP METAL 820 1% 1/10W
1-216-650-11 s RES, CHIP METAL 910 1% 1/10W
1-216-651-11 s RES, CHIP METAL 1.0k 1% 1/10W
1-216-652-11 s RES, CHIP METAL 1.1k 1% 1/10W
1-216-653-11 s RES, CHIP METAL 1.2k 1% 1/10W

1-216-655-11 s RES, CHIP METAL 1.5k 1% 1/10W
1-216-656-11 s RES, CHIP METAL 1.6k 1% 1/10W
1-216-657-11 s RES, CHIP METAL 1.8k 1% 1/10W
1-216-658-11 s RES, CHIP METAL 2k 1% 1/10W
1-216-659-11 s RES, CHIP METAL 2.2k 1% 1/10W

1-216-660-11 s RES, CHIP METAL 2.4k 1% 1/10W
1-216-661-11 s RES, CHIP METAL 2.7k 1% 1/10W
1-216-662-11 s RES, CHIP METAL 3k 1% 1/10W
1-216-663-11 s RES, CHIP METAL 3.3k 1% 1/10W
1-216-664-11 s RES, CHIP METAL 3.5k 1% 1/10W

1-216-665-11 s RES, CHIP METAL 3.9k 1% 1/10W
1-216-666-11 s RES, CHIP METAL 4.3k 1% 1/10W
1-216-667-11 s RES, CHIP METAL 4.7k 1% 1/10W
1-216-668-11 s RES, CHIP METAL 5.1k 1% 1/10W
1-216-669-11 s RES, CHIP METAL 5.6k 1% 1/10W

(RESISTOR, CHIP METAL)

Part No. SP Description

1-216-670-11 s RES, CHIP METAL 6.2k 1% 1/10W
1-216-671-11 s RES, CHIP METAL 6.8k 1% 1/10W
1-216-672-11 s RES, CHIP METAL 7.5k 1% 1/10W
1-216-673-11 s RES, CHIP METAL 8.2k 1% 1/10W
1-216-674-11 s RES, CHIP METAL 9.1k 1% 1/10W

1-216-675-11 s RES, CHIP METAL 10k 1% 1/10W
1-216-676-11 s RES, CHIP METAL 11k 1% 1/10W
1-216-677-11 s RES, CHIP METAL 12k 1% 1/10W
1-216-678-11 s RES, CHIP METAL 13k 1% 1/10W
1-216-679-11 s RES, CHIP METAL 15k 1% 1/10W

1-216-680-11 s RES, CHIP METAL 16k 1% 1/10W
1-216-681-11 s RES, CHIP METAL 18k 1% 1/10W
1-216-682-11 s RES, CHIP METAL 20k 1% 1/10W
1-216-683-11 s RES, CHIP METAL 22k 1% 1/10W
1-216-684-11 s RES, CHIP METAL 24k 1% 1/10W

1-216-685-11 s RES, CHIP METAL 27k 1% 1/10W
1-216-686-11 s RES, CHIP METAL 30k 1% 1/10W
1-216-687-11 s RES, CHIP METAL 33k 1% 1/10W
1-216-688-11 s RES, CHIP METAL 36k 1% 1/10W
1-216-689-11 s RES, CHIP METAL 39k 1% 1/10W

1-216-690-11 s RES, CHIP METAL 43k 1% 1/10W
1-216-691-11 s RES, CHIP METAL 49k 1% 1/10W
1-216-692-11 s RES, CHIP METAL 51k 1% 1/10W
1-216-693-11 s RES, CHIP METAL 56k 1% 1/10W
1-216-694-11 s RES, CHIP METAL 62k 1% 1/10W

1-216-695-11 s RES, CHIP METAL 68k 1% 1/10W
1-216-696-11 s RES, CHIP METAL 75k 1% 1/10W
1-216-697-11 s RES, CHIP METAL 82k 1% 1/10W
1-216-698-11 s RES, CHIP METAL 91k 1% 1/10W
1-216-699-11 s RES, CHIP METAL 100k 1% 1/10W

EX-224 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6266-178-A	o	PRINTED CIRCUIT BOARD, EX-224
CN1M	1-566-986-11	s	CONNECTOR, 100P, MALE
CN2M	1-566-986-11	s	CONNECTOR, 100P, MALE
CN3F	1-566-984-11	s	CONNECTOR, 100P, FEMALE
CN4F	1-566-984-11	s	CONNECTOR, 100P, FEMALE

IF-278 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6267-182-A	o	MOUNTED CIRCUIT BOAD, IF-278
4pcs	2-130-288-01	o	SUPPORT
4pcs	7-621-759-35	s	+PSW, 2.6X5
C1	1-161-494-00	s	CERAMIC 0.022uF 25V
C2	1-161-494-00	s	CERAMIC 0.022uF 25V
C3	1-161-494-00	s	CERAMIC 0.022uF 25V
C4	1-162-209-31	s	CERAMIC 27PF 5% 50V
C5	1-162-209-31	s	CERAMIC 27PF 5% 50V
C6	1-126-160-11	s	ELECT 1uF 20% 50V
C7	1-161-494-00	s	CERAMIC 0.022uF 25V
C8	1-161-494-00	s	CERAMIC 0.022uF 25V
C9	1-162-199-31	s	CERAMIC 10PF 5% 50V
C10	1-162-199-31	s	CERAMIC 10PF 5% 50V
C11	1-124-584-00	s	ELECT 100uF 20% 10V
C12	1-161-494-00	s	CERAMIC 0.022uF 25V
C13	1-162-286-31	s	CERAMIC 220PF 10% 50V
C14	1-161-494-00	s	CERAMIC 0.022uF 25V
C15	1-124-463-00	s	ELECT 0.1uF 20% 50V
C16	1-126-096-11	s	ELECT 10uF 20% 35V
C17	1-161-494-00	s	CERAMIC 0.022uF 25V
C18	1-161-494-00	s	CERAMIC 0.022uF 25V
C19	1-162-286-31	s	CERAMIC 220PF 10% 50V
C20	1-161-494-00	s	CERAMIC 0.022uF 25V
C21	1-161-494-00	s	CERAMIC 0.022uF 25V
C22	1-124-584-00	s	ELECT 100uF 20% 10V
CN1	1-506-731-11	o	PIN, CONNECTOR 40P
D1	8-719-911-19	s	DIODE 1SS119
D2	8-719-911-19	s	DIODE 1SS119
D3	8-719-911-19	s	DIODE 1SS119
D4	8-719-911-19	s	DIODE 1SS119
D5	8-719-911-19	s	DIODE 1SS119
D6	8-719-911-19	s	DIODE 1SS119
D7	8-719-911-19	s	DIODE 1SS119
D8	8-719-911-19	s	DIODE 1SS119
D9	8-719-911-19	s	DIODE 1SS119
D10	8-719-911-19	s	DIODE 1SS119
D11	8-719-911-19	s	DIODE 1SS119
D12	8-719-911-19	s	DIODE 1SS119
D13	8-719-911-19	s	DIODE 1SS119
D14	8-719-911-19	s	DIODE 1SS119
D15	8-719-911-19	s	DIODE 1SS119
D16	8-719-911-19	s	DIODE 1SS119
D17	8-719-911-19	s	DIODE 1SS119
D18	8-719-911-19	s	DIODE 1SS119
D19	8-719-911-19	s	DIODE 1SS119
D20	8-719-911-19	s	DIODE 1SS119
D21	8-719-911-19	s	DIODE 1SS119
D22	8-719-911-19	s	DIODE 1SS119
D23	8-719-911-19	s	DIODE 1SS119
D24	8-719-911-19	s	DIODE 1SS119
D25	8-719-911-19	s	DIODE 1SS119
D26	8-719-911-19	s	DIODE 1SS119
D27	8-719-911-19	s	DIODE 1SS119
D28	8-719-911-19	s	DIODE 1SS119
D29	8-719-911-19	s	DIODE 1SS119
IC1	8-759-282-04	s	IC PC74HC139N
IC2	8-759-744-98	s	IC MBM27C256A-BVS1201

NOTE : Please see page 8-9 for the parts that are not listed in the parts list.

(IF-278 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC3	8-759-303-94	s	IC HD64B180R0P
IC4	8-759-374-80	s	IC LC3564S-10
IC5	8-759-908-35	s	IC TL7705CP-B
IC6	8-759-916-25	s	IC SN74HC32AN
IC7	8-759-926-30	s	IC AM26LS30PC
IC8	8-759-917-05	s	IC SN74HC541AN
IC9	8-759-938-68	s	IC CXD1095Q
IC10	8-759-916-12	s	IC SN74HC00AN
IC11	8-759-032-81	s	IC MC74HC74AN
IC12	8-759-926-32	s	IC AM26LS32PC
JW1	1-564-948-21	o	PIN, CONNECTOR 3P
Q1	8-729-900-85	s	TRANSISTOR DTC144WS
Q2	8-729-900-85	s	TRANSISTOR DTC144WS
Q3	8-729-900-85	s	TRANSISTOR DTC144WS
Q4	8-729-900-85	s	TRANSISTOR DTC144WS
Q5	8-729-900-85	s	TRANSISTOR DTC144WS
Q6	8-729-900-85	s	TRANSISTOR DTC144WS
Q7	8-729-900-85	s	TRANSISTOR DTC144WS
Q8	8-729-900-85	s	TRANSISTOR DTC144WS
Q9	8-729-900-85	s	TRANSISTOR DTC144WS
Q10	8-729-900-85	s	TRANSISTOR DTC144WS
R1	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R2	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R3	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R4	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R5	1-249-393-11	s	CARBON 10 5% 1/4W
R6	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R7	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R8	1-249-405-11	s	CARBON 100 5% 1/4W
R9	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R10	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R11	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R12	1-249-405-11	s	CARBON 100 5% 1/4W
R13	1-249-441-11	s	CARBON 100K 5% 1/4W
R14	1-249-441-11	s	CARBON 100K 5% 1/4W
R15	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R16	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R17	1-249-429-11	s	CARBON 10K 5% 1/4W
R18	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R19	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R20	1-249-425-11	s	CARBON 4.7K 5% 1/4W
R21	1-249-429-11	s	CARBON 10K 5% 1/4W
RB1	1-231-410-00	s	RESISTOR BLOCK 10Kx8
RB2	1-235-005-00	s	RESISTOR BLOCK 47Kx8
RB3	1-235-005-00	s	RESISTOR BLOCK 47Kx8
RB4	1-235-005-00	s	RESISTOR BLOCK 47Kx8
RB5	1-235-005-00	s	RESISTOR BLOCK 47Kx8
S1	1-570-623-11	s	SWITCH, DIP 8-CKT
S2	1-570-623-11	s	SWITCH, DIP 8-CKT
S3	1-570-204-21	s	SWITCH, KEY BOARD
X1	1-567-812-11	s	RESONATOR, CERAMIC 12.288MHz
Z1	1-562-579-21	s	PLUG, SHORTING

NOTE : Please see page 8-9 for the parts that are not listed in the parts list.

LE-76 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-631-489-11	o	PRINTED CIRCUIT BOARD, LE-76
4pcs	3-674-390-00	o	HOLDER (B), LED
CN1	1-506-468-11	s	CONNECTOR, 3P, MALE
D1	8-719-812-32	s	DIODE TLY123
D2	8-719-812-32	s	DIODE TLY123
D3	8-719-812-32	s	DIODE TLY123
D4	8-719-812-32	s	DIODE TLY123
R1	1-249-408-11	s	CARBON 180 5% 1/4W
R2	1-249-408-11	s	CARBON 180 5% 1/4W
R3	1-249-408-11	s	CARBON 180 5% 1/4W
R4	1-249-408-11	s	CARBON 180 5% 1/4W

MB-263 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	2-130-288-11	o	SUPPORT
4pcs	4-612-636-01	s	SCREW, CONNECTOR FITTING
CN1F	1-566-985-11	o	CONNECTOR, 100P, FEMALE
CN2F	1-566-985-11	o	CONNECTOR, 100P, FEMALE
CN3M	1-568-674-11	s	CONNECTOR, D-SUB 15P, MALE
CN4F	1-568-677-11	s	CONNECTOR, D-SUB 25P, FEMALE
CN5M	1-564-921-11	o	CONNECTOR, 7P, MALE
CN6M	1-506-468-11	s	CONNECTOR, 3P, MALE
CN7F	1-568-676-11	s	CONNECTOR, D-SUB 9P FEMALE
CN8F	1-568-676-11	s	CONNECTOR, D-SUB 9P FEMALE

RY-9 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6267-181-A	o	MOUNTED CIRCUIT BOARD, RY-9
2pcs	2-130-288-21	o	SUPPORT
2pcs	7-621-759-35	s	+PSW, 2.6X5
C1	1-126-157-11	s	ELECT 10uF 20% 16V
CN1	1-564-857-11	o	CONNECTOR, PS-SF 20P
IC1	8-759-242-29	s	IC TC74HC4514AP
IC2	8-759-234-61	s	IC TD62306P
IC3	8-759-234-61	s	IC TD62306P
R1	1-215-373-31	s	METAL 10 1% 1/6W
RY1	1-515-640-11	s	RELAY
RY2	1-515-640-11	s	RELAY
RY3	1-515-640-11	s	RELAY
RY4	1-515-640-11	s	RELAY
RY5	1-515-640-11	s	RELAY
RY6	1-515-640-11	s	RELAY
RY7	1-515-640-11	s	RELAY
RY8	1-515-640-11	s	RELAY
RY9	1-515-640-11	s	RELAY
RY10	1-515-640-11	s	RELAY
RY11	1-515-640-11	s	RELAY
RY12	1-515-640-11	s	RELAY

SW-354 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6267-176-A	o	MOUNTED CIRCUIT BOARD, SW-354
2pcs	2-130-288-01	o	SUPPORT
1pc	4-612-636-01	s	SCREW, CONNECTOR FITTING
2pcs	7-628-254-10	s	SCREW +PS 2.6X6
C1	1-124-589-11	s	ELECT 47uF 20% 16V
C2	1-124-589-11	s	ELECT 47uF 20% 16V
CN1	1-568-675-11	o	CONNECTOR, D-SUB 25P
D1	8-719-911-19	s	DIODE 1SS119
D2	8-719-911-19	s	DIODE 1SS119
D3	8-719-911-19	s	DIODE 1SS119
D4	8-719-911-19	s	DIODE 1SS119
D5	8-719-911-19	s	DIODE 1SS119
D6	8-719-911-19	s	DIODE 1SS119
D7	8-719-911-19	s	DIODE 1SS119
D8	8-719-911-19	s	DIODE 1SS119
D9	8-719-911-19	s	DIODE 1SS119
D10	8-719-911-19	s	DIODE 1SS119
D11	8-719-911-19	s	DIODE 1SS119
D12	8-719-911-19	s	DIODE 1SS119
D13	8-719-911-19	s	DIODE 1SS119
D14	8-719-911-19	s	DIODE 1SS119
D15	8-719-911-19	s	DIODE 1SS119
D16	8-719-911-19	s	DIODE 1SS119
D17	8-719-911-19	s	DIODE 1SS119
D18	8-719-911-19	s	DIODE 1SS119
IC1	8-759-242-31	s	IC TC74HC4515AP
IC2	8-759-242-31	s	IC TC74HC4515AP
Q1	8-729-119-78	s	TRANSISTOR 2SC2785-HFE
R1	1-215-405-00	s	METAL 220 1% 1/6W
R2	1-215-409-00	s	METAL 330 1% 1/6W
R3	1-215-373-31	s	METAL 10 1% 1/6W
R4	1-215-373-31	s	METAL 10 1% 1/6W
R5	1-215-453-00	s	METAL 22K 1% 1/6W
R6	1-215-453-00	s	METAL 22K 1% 1/6W
R7	1-215-469-00	s	METAL 100K 1% 1/6W
R8	1-215-469-00	s	METAL 100K 1% 1/6W
R9	1-215-469-00	s	METAL 100K 1% 1/6W
R10	1-215-469-00	s	METAL 100K 1% 1/6W
R11	1-215-469-00	s	METAL 100K 1% 1/6W
R12	1-215-469-00	s	METAL 100K 1% 1/6W
R13	1-215-469-00	s	METAL 100K 1% 1/6W
R14	1-215-469-00	s	METAL 100K 1% 1/6W
S1	1-571-966-12	s	SWITCH, PUSH
S2	1-571-966-12	s	SWITCH, PUSH
S3	1-571-966-12	s	SWITCH, PUSH
S4	1-571-966-12	s	SWITCH, PUSH
S5	1-571-966-12	s	SWITCH, PUSH
S6	1-571-966-12	s	SWITCH, PUSH
S7	1-571-966-12	s	SWITCH, PUSH
S8	1-571-966-12	s	SWITCH, PUSH
S9	1-571-966-12	s	SWITCH, PUSH
S10	1-571-966-12	s	SWITCH, PUSH
S11	1-571-966-12	s	SWITCH, PUSH
S12	1-571-966-12	s	SWITCH, PUSH
S13	1-572-001-11	s	SWITCH, PUSH
S14	1-572-001-21	s	SWITCH, PUSH

NOTE : Please see page 8-9 for the parts that are not listed in the parts list.

VSW-22 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6257-241-A	o	MOUNTED CIRCUIT BOARD, VSW-22
1pc	2-139-014-51	o	LABEL, PC BOARD NAME
1pc	2-182-909-01	o	LEVER, PC BOARD
C1	1-163-119-00	s	CERAMIC, CHIP 120PF 5% 50V
C2	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C5	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C10	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C11	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C14	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C15	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C21	1-126-919-11	s	ELECT, 6800uF 20% 6.3V
C23	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C28	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C29	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C30	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C34	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C101	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C102	1-124-287-00	s	ELECT 10uF 20% 10V
C103	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C104	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C105	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C201	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C202	1-124-287-00	s	ELECT 10uF 20% 10V
C203	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C301	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C302	1-124-287-00	s	ELECT 10uF 20% 10V
C303	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C304	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C305	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C401	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C402	1-124-287-00	s	ELECT 10uF 20% 10V
C403	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C501	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C502	1-124-287-00	s	ELECT 10uF 20% 10V
C503	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C504	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C505	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C601	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C602	1-124-287-00	s	ELECT 10uF 20% 10V
C603	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C701	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C702	1-124-287-00	s	ELECT 10uF 20% 10V
C703	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C704	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C705	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C801	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C802	1-124-287-00	s	ELECT 10uF 20% 10V
C803	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C901	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C902	1-124-287-00	s	ELECT 10uF 20% 10V
C903	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C904	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C905	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1001	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1002	1-124-287-00	s	ELECT 10uF 20% 10V
C1103	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1101	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1102	1-124-287-00	s	ELECT 10uF 20% 10V

(VSW-22 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C1103	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1104	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1105	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1201	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
C1202	1-124-287-00	s	ELECT 10uF 20% 10V
C1203	1-135-156-21	s	TANTAL 6.8uF 10% 6.3V
CN1M	1-563-986-11	s	CONNECTOR, 100P, MALE
CN2M	1-563-986-11	s	CONNECTOR, 100P, MALE
CN3F	1-563-772-11	s	CONNECTOR, D-SUB 25P FEMALE
CN4	1-563-239-11	s	CONNECTOR, 40P
CN5	1-563-322-11	s	CONNECTOR, 20P
CV1	1-141-304-21	s	CAP, TRIMMER 10PF
D1	8-719-100-05	s	DIODE 1S2837
D2	8-719-100-05	s	DIODE 1S2837
D3	8-719-100-05	s	DIODE 1S2837
D4	8-719-100-05	s	DIODE 1S2837
D5	8-719-100-05	s	DIODE 1S2837
D6	8-719-100-05	s	DIODE 1S2837
D7	8-719-100-05	s	DIODE 1S2837
D8	8-719-100-05	s	DIODE 1S2837
D9	8-719-100-05	s	DIODE 1S2837
D10	8-719-100-05	s	DIODE 1S2837
D11	8-719-100-05	s	DIODE 1S2837
D12	8-719-100-05	s	DIODE 1S2837
D13	8-719-100-05	s	DIODE 1S2837
D14	8-719-100-05	s	DIODE 1S2837
D15	8-719-100-05	s	DIODE 1S2837
D16	8-719-100-05	s	DIODE 1S2837
D17	8-719-100-05	s	DIODE 1S2837
D18	8-719-100-05	s	DIODE 1S2837
D19	8-719-100-03	s	DIODE 1S2835
D26	8-719-800-76	s	DIODE 1SS226
D27	8-719-100-05	s	DIODE 1S2837
D28	8-719-100-05	s	DIODE 1S2837
D29	8-719-100-05	s	DIODE 1S2837
FL1	1-421-773-11	s	FILTER, NOISE REMOVAL
FL2	1-421-773-11	s	FILTER, NOISE REMOVAL
IC1	8-759-239-55	s	IC TC74HC123AF
IC2	8-759-239-55	s	IC TC74HC123AF
IC3	8-759-987-27	s	IC LM1881M
IC4	8-759-239-55	s	IC TC74HC123AF
IC5	8-759-925-80	s	IC SN74HC14ANS
IC6	8-759-234-24	s	IC TC40175BF
IC7	8-759-420-41	s	IC MN4514BS
IC11	1-808-776-11	s	HIC (V OUT)
IC12	8-759-200-79	s	IC TC4049BF
IC13	8-759-200-74	s	IC TC4023BF
IC101	8-752-038-19	s	IC CXA1432P
IC102	8-752-038-18	s	IC CXA1431P
IC201	8-752-038-19	s	IC CXA1432P
IC301	8-752-038-19	s	IC CXA1432P
IC302	8-752-038-18	s	IC CXA1431P
IC401	8-752-038-19	s	IC CXA1432P
IC501	8-752-038-19	s	IC CXA1432P
IC502	8-752-038-18	s	IC CXA1431P
IC601	8-752-038-19	s	IC CXA1432P
IC701	8-752-038-19	s	IC CXA1432P

NOTE : Please see page 8-9 for the parts that are not listed in the parts list.

(VSW-22 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC702	8-752-038-18	s	IC CXA1431P
IC801	8-752-038-19	s	IC CXA1432P
IC901	8-752-038-19	s	IC CXA1432P
IC902	8-752-038-18	s	IC CXA1431P
IC1001	8-752-038-19	s	IC CXA1432P
IC1101	8-752-038-19	s	IC CXA1432P
IC1102	8-752-038-18	s	IC CXA1431P
IC1201	8-752-038-19	s	IC CXA1432P
JW1	1-564-950-21	o	PIN, CONNECTOR 8P
JW2	1-564-948-21	o	PIN, CONNECTOR 3P
JW3	1-564-948-21	o	PIN, CONNECTOR 3P
JW4	1-564-948-21	o	PIN, CONNECTOR 3P
JW5	1-564-948-21	o	PIN, CONNECTOR 3P
L1	1-421-329-00	s	COIL, CHOKE
Q1	8-729-107-31	s	TRANSISTOR 2SC3545-T43
Q2	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q3	8-729-100-66	s	TRANSISTOR 2SC1623-L6
Q5	8-729-113-22	s	TRANSISTOR FA1L4L-L30
Q8	8-729-107-31	s	TRANSISTOR 2SC3545-T43
Q9	8-729-113-22	s	TRANSISTOR FA1L4L-L30
Q10	8-729-113-22	s	TRANSISTOR FA1L4L-L30
Q11	8-729-113-22	s	TRANSISTOR FA1L4L-L30
Q12	8-729-113-22	s	TRANSISTOR FA1L4L-L30
R5	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R6	1-216-109-11	s	METAL, CHIP 330K 5% 1/10W
R7	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R11	1-216-117-00	s	METAL 680K 5% 1/10W
R19	1-216-097-11	s	METAL, CHIP 100K 5% 1/10W
R63	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R84	1-216-615-11	s	METAL, CHIP 33 5% 1/10W
R101	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R201	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R301	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R401	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R501	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R601	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R701	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R801	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R901	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R1001	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R1101	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R1201	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R1300	⚠ 1-215-861-00	s	METAL, OXIDE FILM 47 5% 1W
RV1	1-228-454-00	s	ADJ, CERMET 200
Z1	1-562-579-21	s	PLUG, SHORTING
Z2	1-562-579-21	s	PLUG, SHORTING
Z3	1-562-579-21	s	PLUG, SHORTING
Z4	1-562-579-21	s	PLUG, SHORTING
Z5	1-562-579-21	s	PLUG, SHORTING

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-413-462-13	s	REGULATOR, SWITCHING (ED-111)
1pc	1-944-067-11	o	HARNSS, (9P)

(to LE-76 BOARD)

CN1	1-562-148-11	o	HOUSING, 3P
	1-564-026-00	o	CONTACT, FEMALE, AWG26-30

(to MB-263 BOARD)

CN5	1-562-185-00	o	HOUSING, 14P
	1-563-814-11	s	CONTACT, FEMALE
CN6	1-562-157-11	o	HOUSING, 12P
	1-563-814-11	s	CONTACT, FEMALE
CN10	1-562-185-00	o	HOUSING, 14P
	1-563-088-11	s	CONTACT, FEMALE, AWG24-30
CN11	1-562-822-11	o	HOUSING, 7P
	⚠ 1-560-764-21	o	CONTACT, FEMALE, AWG18-24
CN12	1-562-148-11	o	HOUSING, 3P
	1-564-026-00	o	CONTACT, FEMALE, AWG26-30

(to SWITCHING REGULATOR)

CN1	⚠ 1-562-818-11	o	HOUSING, 3P
	1-560-764-21	o	CONTACT, FEMALE AWG18-24
CN3	1-562-822-11	o	HOUSING, 7P
	⚠ 1-560-764-21	o	CONTACT, FEMALE, AWG18-24
CN101	⚠ 1-580-375-11	s	INLET 3P
CN201	1-563-817-21	s	CONNECTOR, D-SUB, 25P
	1-563-088-11	o	CONTACT, FEMALE, AWG24-30
CN204	1-566-355-21	s	CONNECTOR, D-SUB 15P
	1-566-353-21	o	CONTACT, FEMALE
S101	⚠ 1-570-384-11	s	SWITCH, ROCKER (AC POWER)

NOTE : Please see page 8-9 for the parts that are not listed in the parts list.

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6266-178-A	o	MOUNTED CIRCUIT BOARD, EX-224
(see "EX-224 BOARD" for the components.)			
1pc	⚠ 1-506-411-21	s	ADAPTOR, AC PLUG 3P-2P (FOR J)
1pc	⚠ 1-551-812-11	s	CORD, POWER 3P (FOR J, UC)
1pc	⚠ 1-590-910-11	s	CORD SET, POWER (FOR EK)
1pc	1-943-888-12	o	HARNESS (UNIT) 25P/25P
1pc	2-990-242-01	s	HOLDER (B), PLUG (FOR J, UC)
1pc	3-170-078-01	s	HOLDER (B), PLUG (FOR EK)

NOTE : Please see page 8-9 for the parts that are not listed in the parts list.

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